

## **THE GIFTED CHILD**

# The Gifted Child

*Edited by* PAUL WITTY

THE AMERICAN ASSOCIATION FOR GIFTED CHILDREN

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## FOREWORD

The most conspicuous evidence of the genius of America is found in our capacity for many kinds of mass production. Combines to harvest wheat, assembly lines to manufacture automobiles — for many people these and similar things typify America. Schools in America, too, operate on a mass production scale. They deal with millions of pupils and billions of dollars. Mass production has undoubtedly fostered the welfare of the American people; but advances in all areas of life depend to a very substantial degree upon the vision and insight of a relatively few exceptionally able people. In our concern about improving the opportunities for the millions we must not fail to make provision for those who can bring about still greater improvement in our society. There is abundant evidence that we are neglecting our greatest resource — gifted children and youth.

During the past generation pioneers in the field made great progress in locating and studying gifted children, for which they deserve great credit. In the pioneer work, however, the gifted were identified largely by their superiority as revealed by an intelligence test. There is need today for expansion of this concept to include other types of gifted and talented children.

The American Association for Gifted Children is interested in building upon the foundations of the past and in greatly broadening these foundations. It is vitally concerned with enlarging our concept of ability and with the discovery of better ways to identify the gifted in many different fields. And it is particularly interested in furthering educational opportunities for gifted children and youth. We believe with the prophet of old that when people have no vision they perish. Much of the vision necessary for the promotion of human welfare must come from our gifted boys and girls educated for worth-while leadership and productivity in a democracy.

The American Association for Gifted Children is conducting a wide range of activities designed to meet some of the outstanding needs of this group. Among the most urgent needs are: a more widespread understanding of the nature of gifted children and youth, more efficient teachers, improved working relationships between parents and teachers, more varied and more stimulating curricula in our school system, and more research on the gifted.



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Letters from parents and teachers and reviews of the literature on gifted children showed clearly that a nontechnical book with practical suggestions for handling problems of the gifted child was greatly needed. The members of the American Association voted unanimously to sponsor such a volume. A Publications Committee was appointed, composed of Paul Witty, *Chairman*, Grace T. Hallock, Gertrude Hildreth, John Lentz, W. Carson Ryan, Ruth Strang, Harvey Zorbaugh.

This group spent two years in the preparation of the book. To the Committee and authors of the different chapters the Association is deeply indebted, as well as to the authors and publishers who granted permission for the use of quotations. Special appreciation is due Paul Witty, the editor, who in the face of great demands upon him as teacher, writer, and lecturer, generously contributed to the planning, writing, and editing of the book. The distinguished authors who prepared the various chapters agreed that all royalties from the book would be given to the Association to advance its work for gifted children. The views expressed in the different chapters are those of the authors and do not necessarily represent those of all members of the Association, who vary in their interpretation of the data upon gifted children. All agree, however, that the gifted child is greatly neglected. They agree, too, that democracy will be realized in its richest sense by recognizing the full range of ability within our total population and by providing adequate opportunities for the maximum development of every child and youth -- including the gifted and the talented. The members of the Association concur, too, in emphasizing the necessity for developing in gifted children an awareness of their responsibility not only to develop their gifts fully, but also to use their abilities constructively in the interests of democracy. Wider recognition and greater conservation of the gifted should lead to the emergence of more capable leaders in all fields including art, music, education, government, and science.

The Association presents this book with the conviction that by helping gifted children to find their places in the home, in the school, and in the community a more effective democratic society will be realized.

THE AMERICAN ASSOCIATION FOR GIFTED CHILDREN

Harold F. Clark, *President*

Pauline Williamson, *Secretary*

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## **THE GIFTED CHILD**

In colonial days some teachers in American schools observed that all children did not respond favorably to "equal opportunities." Pupils who were slow in learning were sometimes punished, they were usually held back in school, repeating grade after grade. Problems associated with the education of the slow-learning pupil became acute when compulsory attendance laws brought more and more children into schools for longer periods of time. Because the deviation of the extremely slow child was so obvious and his adjustment so difficult, he was among the first of exceptional children to attract the attention of educators. Since the bright child usually conformed to school routine, he was generally permitted to drift through school with his superior abilities unrecognized and unchallenged.

### Research Studies of the Exceptional Child

During the nineteenth century research studies sought to reveal the nature and needs of the slow-learning child. Similar studies of the gifted were not undertaken at this time. Terman lists four factors which operated to limit research on the gifted:

1. The influence of current beliefs, partaking of the nature of superstitions, regarding the essential nature of the Great Man, who has commonly been regarded by the masses as qualitatively set off from the rest of mankind, the product of supernatural causes, and moved by forces which are not to be explained by the natural laws of human behavior
2. The widespread belief, hardly less superstitious in its origin, that intellectual precocity is pathological
3. The vigorous growth of democratic sentiment in Western Europe and America during the last few hundred years, which has necessarily tended to encourage an attitude unfavorable to a just appreciation of native individual differences in human endowment
4. The tardy birth of the biological sciences, particularly genetics, psychology, and education \*

### Educational Provisions for the Gifted

Attention to gifted children was stimulated by the publication in 1869 of Galton's *Hereditary Genius*. Terman believes that this

\* Lewis M. Terman and Others, *Genetic Studies of Genius*. Vol. I, *Mental and Physical Traits of a Thousand Gifted Children* (Stanford University, California: Stanford University Press, 1925), Preface

book marked the beginning of an era of strong interest in individual differences.<sup>5</sup> Some cities had already made notable adaptations to care for individual differences. In 1866, Elizabeth, New Jersey, devised a multiple track system which permitted the bright and gifted pupil to advance more rapidly than the average pupil. In 1867 a flexible grading and promotional system was introduced in the St. Louis schools. It was possible under this plan for the gifted pupil to progress more rapidly through the elementary grades.<sup>6</sup>

About 1900, a number of school systems made rather extensive provisions for differences in pupil ability. In some cities, such as Santa Barbara, California, pupils were placed in groups according to the results of tests. The "three-track plan" was used in many cities. Individualized instruction, strongly advocated by Frederick Burk, of San Francisco, was practiced in other cities.

Special classes for the gifted pupil were formed in Los Angeles, California, Cleveland, Ohio, and Rochester, New York, in 1920. The work of these classes was widely acclaimed as offering enriched opportunities and suitable challenge for the most capable pupils.

From 1920 to 1930, the gifted were provided for in some schools by acceleration or by enrichment or by a combination of these practices. Within regular classes, too, good teachers sometimes enriched the offering for the gifted. That the foregoing efforts were infrequent is shown by the White House Conference Report on Child Health and Protection. It was estimated that there were in the United States one and one half million pupils of superior intelligence who varied so greatly from the average that they required special education.<sup>7</sup> One investigator reported that only forty cities in twenty three states had schools and classes for such pupils. In all these classes only about 4000 children were enrolled.<sup>8</sup> Another indication of the small amount of attention to the gifted is found in the space allotted to this topic in publications. For example, in the volume on *Special Education — The*

<sup>5</sup> *Ibid*

<sup>6</sup> John E. Bentley, *Superior Children* (New York: W. W. Norton and Company, 1937) p. 192.

<sup>7</sup> White House Conference on Child Health and Protection. *Special Education — The Handicapped and the Gifted*, Report of the Committee on Special Classes, Charles Scott Berry, Chairman (New York: Century Company, 1930).

<sup>8</sup> *Ibid*, p. 549.

## PROGRESS IN THE EDUCATION OF THE GIFTED

Throughout history attempts have been made to provide appropriate education for the gifted child, for, as one writer has indicated, the need for special education of the gifted is as old as mankind. At all times, including the present, however, such provision has been unsystematic and inadequate.

As early as the sixteenth century, a Mohammedan ruler selected the "fairest, strongest, and most intelligent youth" to train as leaders. These efforts were reported to have been highly successful.<sup>1</sup> Of course, different concepts of superiority, based on factors such as birth, power, and material wealth, were dominant during various historical periods. Intellectual superiority came to be highly esteemed as a type of leadership during the Renaissance, the Reformation, and the Industrial Revolution.<sup>2</sup> Little attention, however, was given to the education of gifted children from the seventeenth throughout most of the nineteenth century. This era was characterized by a political philosophy which held that all men are created equal. Accordingly school curricula were designed to offer all children equality of opportunity. The early American Republic generally endorsed this philosophy.<sup>3</sup>

<sup>1</sup> Merle R. Sumption, *Three Hundred Gifted Children* (Yonkers-on-Hudson, New York: World Book Company, 1941), p. 1.

<sup>2</sup> Walter M. Kotschnig, "Educating the Elite in Europe," *Journal of Educational Sociology*, Vol. XIII (October, 1939), pp. 70-81.

<sup>3</sup> Merle R. Sumption, *op cit*. Cf. also Merle R. Sumption, Dorothy Norris, and Lewis M. Terman, "Special Education for the Gifted Child," *Forty-Ninth Yearbook of the National Society for the Study of Education, Part II, The Education of Exceptional Children* (Chicago: University of Chicago Press, 1950), pp. 259-280.

*Handicapped and the Gifted*, more than 515 pages were devoted to the handicapped, while only thirteen pages were given over to the gifted pupil. In these thirteen pages, emphatic statements pointed to the responsibility of "all intelligent, patriotic citizens of the United States" to take "active and efficient steps to save this large number of children from the idleness, the more or less malicious mischief, and the neglect which is their portion in the average public schools of today." The Committee which prepared this volume warned that it is socially reprehensible to neglect highly endowed children, for "in a democracy more than in any other form of government, high grade leadership is essential."<sup>9</sup>

In the decade following the publication of the White House Conference Report, relatively little additional provision for gifted children was made in public schools. And, during World War II, the general neglect of education resulted in even greater deprivations for this group.

### Progress in the Study of the Gifted

Despite the fact that educational provisions for gifted children were conspicuously inadequate during the past thirty years, one notable contribution to the solution of the problem of the gifted child was made. Extensive scientific studies yielded a vast amount of information concerning the nature and needs of this group. Lamson designates the following stages in the development of this knowledge:

1. Devising a scientific measure that would locate superior and gifted children
2. Applying the new instrument in order to locate and describe gifted children, for example, the work of Terman, Hollingworth, and others
3. Experimenting with special classes and other methods designed to offer suitable opportunities for the gifted
4. Making follow up studies, including experimental studies in curriculum development at the high school and college level.<sup>10</sup>

<sup>9</sup> *Ibid.*, p. 543

<sup>10</sup> Edna E. Lamson, *A Study of Young Gifted Children in Senior High School*, Teachers College Contributions to Education, No. 424 (New York: Bureau of Publications, Teachers College, Columbia University, 1930), pp. 7-9.

## Renewed Interest in the Gifted

### *Publications*

Perhaps we are now entering a fifth stage in the field of the gifted—the stage of rapid dissemination of knowledge about gifted children and of a concerted effort to offer gifted and talented children more adequate educational opportunities. In fact, the widespread influence of a number of pamphlets and books, published during the past ten years, suggests that we have already entered this stage. For example, in *Curriculum Adjustments for Gifted Children*, Martens and her collaborators discuss and illustrate types of organization for making curriculum adjustments to care for the gifted in a rural community, in a small urban center, and in a city of 50,000 population. Practices in still larger communities are also described.<sup>11</sup>

A bulletin entitled *High School Methods with Superior Students* offers additional evidence of the growing interest in the gifted pupil. The bulletin reports a study which aimed to reveal “actual practices of junior and senior high schools with respect to the education of superior students.”<sup>12</sup> Although many excellent suggestions are found in this bulletin, the reader cannot avoid observing the inadequacy of the programs. However, this bulletin, like the pamphlet on curriculum adjustments for the gifted, reflects the awakening of interest in the gifted child.

Two widely quoted books have helped spread information about gifted children. Merle E. Sumption, in *Three Hundred Gifted Children*, describes the Major Work Classes of Cleveland, Ohio, and includes a follow-up study of three hundred graduates of these classes.<sup>13</sup> Provisions for gifted pupils in Los Angeles and in New York City have also been widely recognized. The book *Educating Superior Students*, which reported pioneer studies in New York City, aided in bringing about a greater desire to care for the gifted pupil in the high school. In the foreword to this

<sup>11</sup> Elsie H. Martens, *Curriculum Adjustments for Gifted Children*, United States Office of Education Bulletin 1948, No. 1 (Washington, D.C.: United States Government Printing Office, 1948).

<sup>12</sup> *High School Methods with Superior Students*, National Education Association Research Bulletin, Vol. XIX, No. 4 (Washington, D.C.: The Association, 1941).

<sup>13</sup> Merle R. Sumption, *op cit*, pp. 34-73.

book it is stated that "the time is ripe for an organized effort in every high school as a unit and in the system of high schools as a whole to discover and develop to their fullest possibilities, these gifted pupils"<sup>14</sup>

A number of professional books in education and psychology have been influential in calling attention to the educational needs of the gifted. Leta Stetter Hollingworth's book, *Children Above 180 IQ*, described the nature and needs of extraordinarily able pupils. Like the work of L. M. Terman and his associates, Hollingworth's pioneer studies have had profound and far reaching effects upon school people.<sup>15</sup> Undoubtedly, the most significant volume in awakening general interest in this field is Terman and Oden's *The Gifted Child Grows Up*.<sup>16</sup> This remarkable book describes the development of 1528 children of IQ 130 and above. At the time the studies were undertaken, the average age of the children was 10 years. The average age of the young people was 35 when the most recent investigation was made.

In this book, as in others dealing with the gifted, an important finding recurs. As early as ten, the gifted child has educational knowledge far in excess of the average for his grade.

It is a conservative estimate that more than half of the children with IQs of 135 or above had already mastered the school curriculum to a point two full grades beyond the one in which they were enrolled, and some of them as much as three or four grades beyond.<sup>17</sup>

Under the conditions described in the foregoing quotation the gifted child is offered little that is challenging in the typical elementary school. The neglect is even greater in the secondary school. As one writer states:

The gifted, the potential leaders, discoverers, and creators, however, are usually left to develop their own skills in their own way and in terms of personal initiative alone.<sup>18</sup>

Fortunately some gifted children do make commendable progress despite the prevailing lack of stimulation. However, studies of successful and less successful young adults who were identified as gifted children reveal that the successful young people were in childhood more frequently recognized and encouraged by appreciative parents or teachers. It has become clear that early identification and systematic encouragement of gifted children are responsibilities which parents and teachers must assume if we are to conserve talent and ability.

### *Work of the American Association for Gifted Children*

Among the organizations which are attempting to stimulate a more widespread interest in the gifted, the work of the American Association for Gifted Children is outstanding.<sup>19</sup> The primary aim of this association is to offer encouragement and to provide educational opportunities for the gifted. The organization has already been responsible for sponsoring and distributing widely articles and pamphlets dealing with the gifted child and his needs. For example, the April, 1948, issue of the magazine *Understanding the Child*, devoted entirely to the gifted, was sent to many interested persons throughout the United States. Other services of the Association include the stimulation of research, the planning of meetings to inform the public of the needs of the gifted, and the provision of guidance and aid for gifted pupils.

At one meeting of the Association for Gifted Children, discussion centered on the most effective ways to foster a better understanding of gifted children and youth and to improve educational opportunities. It was suggested that a book be designed to awaken interest and effort among teachers, supervisors, and administrators in conserving and utilizing human talents and resources.

An editorial committee was formed whose members held interviews with leaders in education and in public life. After several months of study, the editorial committee drew up the following list of 'essential' topics to be included in the volume.

<sup>19</sup> An example of another recent effort to stimulate interest in the gifted is the monograph *Education of the Gifted*, published in 1950 by the Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators.



- 1 Definition of the gifted. It was believed that this definition should be sufficiently comprehensive to include the mentally gifted, the talented, and other potential leaders
- 2 A description of the results of genetic studies of gifted children and youth. It was thought that widespread acquaintance with this information would lead to a more general appreciation of the needs of the gifted, as well as to the stimulation of constructive efforts to care for this group
- 3 A discussion of the role of the teacher and of the significance of the teacher pupil relationship in determining the nature and extent of attainment and leadership
- 4 A presentation covering vital factors in the community which affect the gifted child and limit or promote his full development.
- 5 A section devoted to the mental health of the gifted child and youth. Such a section should lead to reduction in the personality disorders which sometimes preclude the full development and expression of ability and talent.
- 6 A study of the provisions now being made throughout the United States in offering educational opportunity and challenge for the gifted.
- 7 Detailed descriptions of some special provisions being made for gifted and talented pupils in science, art, and other fields
- 8 A discussion of the role of the school administrator to reveal opportunities and responsibilities in promoting the welfare of the gifted.
- 9 An annotated bibliography of investigations and reports dealing with gifted children and youth.

After this list of topics was assembled, an effort was made to obtain the services of educational leaders in the preparation of the volume. The Association was successful in securing the enthusiastic and generous cooperation of a number of outstanding educators, who prepared chapters. It is hoped that this volume will offer stimulation and encouragement to teachers, supervisors, and administrators in improving educational opportunities for the gifted. It is true, of course, that school people alone cannot safeguard the development of every gifted child.

To conserve ability and talent, educators working with other citizens must find ways to identify and offer educational opportunity for many gifted children who, at present, because of financial obstacles, do not acquire an education commensurate with their ability and promise. Educators must also discover means of encouraging and motivating many other pupils to develop and ex-

press more fully their unusual gifts. A major part of the educators' responsibility will be to work with parents in the development of a clearer understanding of the gifted child and his needs. The public schools of the United States have a heavy responsibility as well as a unique opportunity for developing leaders. They should seek to lessen handicaps and obstacles which many gifted children encounter. In addition, they should strive to provide the opportunity and incentive gifted children and youth require in order to develop in accordance with their potentiality and promise.

## Chapter Two

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## IDENTIFYING GIFTED CHILDREN

Giftedness appears in many different forms in every cultural group and at every level of society. It is the source of power which has contributed most to progress at all times and in all places. Yet, like other human resources, it remains a potentiality until it has been discovered and developed.

### ✓ Concepts of Giftedness

Giftedness may show itself in the possession of a high level of general intelligence as measured by traditional tests. Or it may be characterized by special abilities of a high order which are not necessarily associated with a high intelligence quotient. In any program concerned with the identification of gifted children, therefore, it is important to develop methods of detecting individuals of high intellectual ability as well as those who exhibit special gifts in such areas as the arts, music, mechanics, science, social relations, leadership, and organization.

Since so many variable factors enter into the definition of giftedness, it is difficult to determine satisfactorily the normal expectancy of giftedness in any population at any given time.

Some authorities define giftedness so rigorously that not more than one out of each 100 persons might be expected to fulfill the requirements. Others, recognizing varying degrees of intelligence, state that 10 out of every 100 might qualify for the gifted category provided they were given adequate opportunities for developing their special abilities.

### Environmental Influences on the Gifted

A variety of influences may either facilitate or block the full growth and expression of the gifted child's abilities. Of these influences the foremost is the drive to accomplish, the urge or motivation to use exceptional abilities, which most but not all gifted persons possess. When the drive is lacking, the chance of reaching eminence is remote. However, the possession of exceptional abilities is usually in itself a powerful spur. The chief hazard to be avoided in childhood is the denial of adequate means of expression or a lack of understanding on the part of adults of the need for satisfactory outlets. Great unhappiness and sometimes serious emotional maladjustment develop when a gifted child's mental tasks are too easy for him or when he invites ridicule or jealousy or even fear because of his manifest superiority.

The high but by no means perfect correlation between the gifted child's economic and cultural environment and the emergence of his giftedness is an indication of the influence of early environmental factors. The exceptions — the possessors of a drive to accomplish so forceful that they were able to overcome early adverse conditions — will occur to everyone. Less familiar because they are obscure are those with a high potentiality of giftedness whose success was materially limited through the operation of social and emotional maladjustments or poor health or lack of access to suitable raw material upon which to work.

### Promotion of the Maximum Growth and Development of All Children

Discovering giftedness in children is the responsibility of parents, teachers, school administrators, physicians, guidance counselors, and all others who live and work with children. However,

the present means of identifying and guiding the gifted leaves much to be desired. Some gifted children are recognized in their early years. Others may not show giftedness in certain areas until adolescence or even maturity. Still others who are potentially gifted may never have an opportunity to realize their potentialities. Practically every study of giftedness has revealed the great waste occasioned by the failure to identify and encourage individuals who might have made significant contributions to society if they had been provided with opportunities to develop and use their gifts.

Recognition of the fact that giftedness may be found anywhere, that it manifests itself in many forms, and is only a potentiality which may be slow in developing or completely inhibited has led in recent years to the definition of what may be called the best culture medium for giftedness. This culture medium is an environment which makes it possible for each child to reach the highest level of learning and accomplishment of which he is capable at each stage in his development.

All children, no matter what their potentialities, are first of all children and subject to certain fundamental principles of growth and development. Each child grows physically, mentally, emotionally, and socially at his own rate, which is sometimes fast and sometimes slow. Each child sets his own pace day by day and reacts in his own way in a variety of situations. This individuality is the result of the reactions between the child and his environment at each stage in his development and is slowly seasoned by life itself. Intelligent planning of the experiences needed at each developmental level furnishes the soil for giftedness to take root, if it is present, and to flourish to the point where it can be recognized.

### Factors Involved in Identifying the Gifted

In determining whether a child is or is not gifted many factors must be taken into consideration besides his performance in tests of intelligence and achievement. These factors include his physical, emotional, and social characteristics and his pattern of behavior as observed day by day in many different situations. Anec-

total records, photographs, and even self-evaluation are helpful in studying the child's potentialities and needs

If opportunities for the expression and development of his gifts have been provided and his physical, social, and emotional needs have been well met, the gifted child has an attractive, well-balanced personality with superior physical development and wide interests. The queerness, snobbishness, or antisocial behavior sometimes associated with superior intelligence is not a hallmark of giftedness but rather a sign of the antagonism aroused by social rejection or ridicule.

The performance of the gifted child is consistently superior in the areas of his special interests. The amount of information he has collected in some subject that has caught his fancy or fired his imagination may seem "simply uncanny." If his general advancement is rapid on one developmental level, it usually continues to be rapid as the child progresses to higher levels. The gifted child often shows the capacity to create and to develop activities which are exceptional in the light of what is normally expected of a child of his age and cultural background.

Wherever his gifts lie, it is important to remember that the superior child has the fundamental needs of all children — to grow physically, emotionally, socially, and mentally to the utmost of his abilities. He needs comfort, love and affection, challenging and creative activities, and a helpful and encouraging environment within which to grow. The good life is living fully and richly at each stage of development.

Although it is important to provide special opportunities for the gifted child where needed, it is equally important that nothing be done to precipitate him into adult patterns. He has a right to be a child — to grow up unhampered by fears and unhurt by pressures, intellectual or otherwise. He should not be exploited because of his ability but rather helped to develop as a normal, participating, and functioning member of the society to which he has so much to contribute.

### *Mental Tests*

Individuals vary considerably in their innate ability to acquire, arrange, and use facts. Intelligence tests were devised to measure

this ability as objectively as possible. An intelligence test score is only a numerical appraisal of the mental abilities required in performing a task that requires the exercise of intelligence. The adequacy of the intelligence test score itself (IQ) in giving a true picture of the child's intellectual endowment is conditioned in part by the child's previous experience, by the person giving the test, and by the child's performance and cooperation at the time of the test. In evaluating the results, a reviewer needs to take many other factors into consideration. The test score itself usually gives only the barest clue to other abilities of the gifted, such as initiative, creativeness, and intellectual curiosity.

The abilities possessed by mentally gifted children which are measured by tests of general intelligence may be summarized as follows:

Mentally gifted children have a high degree of general intelligence in the sense of the ability to do abstract thinking and other types of relational thinking. These children rate high in respect to the general intelligence factor which Spearman designated by the letter "G." In terms of Thurstone's theory they possess to a high degree most, if not all, of the eight primary mental abilities. According to Thorndike, they excel in the abilities involved in "abstract" intelligence.

The mentally gifted are characterized by "power" — that is, they are able to do mental tasks of a high degree of difficulty. This is what Thorndike meant by "level" in his discussion of the attributes of intelligence. Gifted children evidence "power" in the Revised Stanford Binet tests, such as digits reversed, memory for sentences, vocabulary, and giving the meaning of abstract words.

The mentally gifted are alert and quick. Spearman thought that intelligence and speed of response were not separable to any great degree. Thorndike gave speed as one of his attributes of intelligence. Most intelligence tests take at least some account of the factor of speed. The mentally gifted are also characterized by broad attention span, by a high degree of insight into problems, and by the ability to generalize.

While current tests of general intelligence will not pick out all the mentally gifted children in any group, these tests are probably the most effective single instrument now available for selecting such children.

## *Aptitude Tests*

Children who are gifted in the sense that they possess, to a high degree, some special ability, are not so readily identified by tests of general intelligence. Their special gifts may lie in one or more such areas as art, music, drama, mechanics, or language ability.

There is still a great deal of controversy among psychologists as to the nature of special abilities and their relation to general intelligence. There is not only disagreement as to whether "aptitudes" exist, but as to what their exact limits are and as to whether they are innate or acquired.

So far as identifying gifted children is concerned, there is, at present, a tendency to use such aptitude tests as are available in order to cast some light at least on the nature of the abilities of the gifted. The value of these tests depends upon the background and training of those who interpret them.

## *Reports of Parents*

While parents are likely to be biased in estimating the intelligence of their children, their reports are often of considerable value in identifying gifted children. After all, no teacher or psychologist can hope to have as intimate a knowledge of a child's behavior over as long a period as his parents have.

In the report on gifted children in California, Terman and Oden<sup>1</sup> state that early indications of superior intelligence most often noted by parents are quick understanding, insatiable curiosity, extensive information, retentive memory, large vocabulary, and unusual interest in such things as number relations, atlases, and encyclopedias. Early walking and talking and the acquiring of the ability to read without training during the preschool period also serve to call the attention of parents to giftedness in their children. Then, too, gifted children are likely to have parents who are either gifted or definitely superior in intelligence themselves and who are therefore more likely to have insight into the ability of their children.

The factors which lead parents astray in judging their children's

<sup>1</sup> Lewis M. Terman and Melita H. Oden, *Genetic Studies of Genius: Vol. IV, The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947), p. 25.



intelligence are, according to Carroll,<sup>2</sup> bias, inaccurate observation, and failure to keep in mind the total child population. The last factor may work in either direction. Some parents of gifted children do not recognize the superior ability of their children because they have no standards with which to compare their behavior. As a result they accept evidences of accelerated development as a matter of course.

### *Reports of Teachers and Other Professional Workers*

One of the interesting facts learned in investigations of gifted children is that teachers sometimes fail to identify them accurately. Only 15.7 per cent of the children nominated by 6000 teachers, each as the most intelligent in his class, were found to be qualified for the gifted group.

Teachers often fail in picking out gifted children because they are inclined to evaluate a child in terms of his school achievement, few gifted children are as educationally advanced as their ability warrants. In many cases boredom with school tasks which furnish no challenge to their intelligence has developed in gifted children poor habits of work and of thinking and a lack of interest in school work.

Teachers also tend to underestimate the ability of gifted children because they overlook the factor of chronological age. They forget that the gifted child may be one or two years younger than his classmates. Reactions to the personality of different children may influence the teacher's evaluation of ability. Thus, a poorly adjusted teacher may be annoyed by the brilliance of the gifted child and be jealous of him. Such a teacher may be unwilling to acknowledge the child's ability. Still other teachers do not have adequate standards of child development by which to judge the gifted child's status and hence to estimate his ability.

It would seem, then, that teachers can be of help in identifying gifted children, nevertheless, if teachers' judgments are relied on exclusively, the majority of gifted children are not likely to be discovered during their school career. This is a situation, however, for which remedies are already being sought. Teachers are now being given criteria for recognizing deviations from physical

<sup>2</sup> Herbert A. Carroll, *Genius in the Making* (New York: McGraw Hill Book Company, 1940), p. 6.

and emotional health in school children. An increasing emphasis is being placed on the value of their observations in detecting signs and symptoms which indicate the need of medical attention. If only for the fact that serious emotional difficulties may develop from a thwarting of gifted children in their efforts to find satisfactory means of occupying themselves, the ability to detect giftedness becomes an important part of the teacher's training in observation.

In addition to teachers, many other professional workers come into contact with gifted children and are a help in identifying them. Sometimes these individuals are pediatricians or physicians in general practice. Occasionally gifted children are picked out by school nurses and physicians, or by public health nurses in their visits to homes. Social workers also come into contact with gifted children in their professional work. Recreation leaders may identify gifted children in their activities. So may Boy Scout and Girl Scout leaders, 4-H Club leaders, and leaders of church groups for boys and girls. After all, a child has home teachers and community teachers in addition to school teachers. Almost any of his community teachers (recreational, religious, etc.) may, from experience with the child, realize the exceptional nature of his gifts.

### *Age-Grade Status of the Gifted Child*

Terman and Oden state: "If you are allowed only one method of locating the highest IQ in a classroom, your chance of getting the right child is better if you merely look in the class register and take the youngest rather than trust the teacher's judgment."<sup>3</sup>

It is doubtful, however, that this method of identifying gifted children is as useful as it was at the inception of Terman's investigation. At that time some schools solved the problem of the education of gifted children, in part at least, by some degree of acceleration in the grades. More recently there has been an increasing tendency in many school systems to group children for instruction largely in accordance with their chronological age and to provide appropriate opportunities for the gifted within the group. There seems to be an increasing tendency to enrich the curriculum for the gifted child rather than to accelerate him in school.

<sup>3</sup> Lewis M. Terman and Melita H. Oden, *op. cit.*, p. 6.

### *School Accomplishment and Achievement Tests*

The man in the street may believe that outstanding ability in children will almost invariably be reflected by superior accomplishment in school. Actually this is not the case. Terman and Oden<sup>4</sup> say that teachers' estimates of school achievement are often inaccurate, that when school marks in the various subjects were compared with scores on reliable and valid achievement tests, large discrepancies were found, that in every school grade there were gifted children whose achievement in one or more subjects was rated as average or below for the grade but whose achievement test scores showed them to be as much as two years *above* their grade norms in those same subjects.

Standard tests of achievement pick out gifted children very much better than do school marks. Terman and Oden,<sup>5</sup> discussing the 1922 testing of gifted children by standard achievement tests, report that the average achievement quotient was 144 — that is, that the average gifted child's educational age was 44 per cent higher than his chronological age. The same group of gifted children had a grade progress quotient of only 114, that is, these children were accelerated only 14 per cent of their ages. It would seem, then, that standard achievement tests have a real place in identifying gifted children.

### **Further Research into the Problems of the Gifted**

Research leading to improvement in the means for identifying gifted children has already been initiated. Much remains, however, to be accomplished. The methods of identifying gifted children now in use serve a very important purpose, but they need to be refined, improved, and more generally applied. We must reinterpret some of our older convictions in the light of fundamental new principles of child growth and development.

Research should be planned to answer the following questions:

1. How can creative ability in its many aspects be identified?
2. How can the capacity for leadership be identified and what are the means through which leadership qualities can be developed?

<sup>4</sup> Lewis M. Terman and Menta H. Oden, *op. cit.*, p. 26.

<sup>5</sup> *Ibid.*, p. 27.

3. What is the relationship between exceptional intellectual ability and ability in special fields, i.e., the arts, economics, government, science, etc.?
4. What is the relationship of environmental factors to the development of giftedness?
5. To what extent are hereditary factors responsible for giftedness?
6. To what extent do factors other than high intellectual capacity condition personal achievement?
7. What is the relationship between a high degree of social ability and a high degree of intellectual ability?
8. What factors encourage gifted persons to develop their highest potentialities?
9. What effect does the early identification of a gifted person have on his development?
10. What means can be developed to identify gifted persons at various stages of growth and development?

## THE STANFORD STUDIES OF THE GIFTED

The purpose of this chapter is to summarize briefly the Stanford study of gifted children and to indicate some of the educational implications of the results obtained to date.

Until early in the present century the literature on gifted children consisted chiefly of magazine articles and treatises written by docters and educational theorists who almost invariably depicted the "precocious" child as abnormal, neurotic, sickly, one-sided, and prone to intellectual deterioration or early death. The belief was often expressed that many of the great geniuses of history were dunces in childhood. It was only after intelligence tests were developed by Binet and his successors that the psychological study of gifted children was widely undertaken. By 1920 numerous studies had been reported which were based on results obtained with a single subject or with very small groups, but these, interesting as they were, proved nothing about gifted children in general because the subjects were so few and in many cases unrepresentative of their kind. Besides, the data reported could usually not be interpreted in terms of norms for unselected subjects, because such norms were rarely available.

<sup>1</sup> We are indebted to the Stanford University Press for permission to include in this chapter certain passages from our book *The Gifted Child Grows Up, Twenty-Five Years Follow-Up of a Superior Group* 1947.

## Plan of Research

The large-scale Stanford study which began in 1921 and has continued to the present was designed to discover what physical, mental, and personality traits are characteristic of gifted children as a class, and what sort of adult the typical gifted child becomes. First, the plan required a large and unbiased sampling of subjects so that whatever was found true of the group investigated would presumably be true of any other representative group of similar mental superiority, living in a comparable culture. Second, it was regarded as essential that the procedures used should be as objective as possible and so clearly defined that the investigation could be repeated and its conclusions checked. Third, it was planned that the subjects should be followed as far as possible into adult life in order to throw light on the constancy of childhood traits and on the factors that influence later achievement.

The investigation was not a direct attack upon the pedagogy of gifted children, it was instead a search for the basic facts necessary for future progress in this field of special training. Once the physical and mental characteristics and the developmental tendencies of gifted children have been definitely established, then, and only then, is it possible to plan intelligently for their education.

The search for subjects, which was carried out by field assistants in 1921-22, included all of the larger and many of the smaller urban areas of California. The method of search has been described in detail elsewhere.<sup>2</sup> It is sufficient here to note that a careful check on the procedures used indicated that close to 90 per cent of the children in the schools surveyed who could have earned an IQ of 140 or above on the 1916 Stanford Binet test were identified. This figure is high enough to insure that the group studied was sufficiently representative to afford a reasonably sound basis for generalizations.

At the end of 1922 the group numbered 1470 subjects, selected

<sup>2</sup> Lewis M. Terman and Others, *Genetic Studies of Genius*, Vol. I, *Mental and Physical Traits of a Thousand Gifted Children* (Stanford University, California: Stanford University Press, 1925); Lewis M. Terman and Melita H. Oden, *Genetic Studies of Genius*, Vol. IV, *The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947).

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from a school population of about a quarter-million. The addition later of 58 siblings who were too young to test at the time of the original survey brought the number of subjects to 1528 (857 boys and 671 girls). Approximately 70 per cent of the group were of pre-high school level with a mean age of 9.7 years. The remaining 30 per cent were of high school level with a mean age of 15.2 years.

The standard set for inclusion in the group was 140 IQ for Binet-tested subjects and 135 for high school subjects selected on the basis of the Terman Group Test. Mean IQ of the former group was 151.0, of the latter group, 142.6. Because of insufficient "top" in the Terman Group Test, it is estimated that an IQ of 142 on this test is probably equivalent to a Stanford-Binet IQ of 150. The standard set was purely arbitrary and was merely intended to insure that subjects admitted to the group would rate within the highest 1 per cent in general intelligence as measured by the tests used.

The data obtained for all subjects included extensive descriptive and case-history material supplied by parents and teachers on blanks specially prepared for home and school. In addition to such general information, both the Home Blank and the School Blank called for ratings of the child on 25 carefully defined traits. Other data obtained chiefly from what was called the Main Experimental Group of 660 pre-high school subjects included medical examinations, anthropometric measurements, scores on the Stanford Achievement Test, scores on a battery of seven character tests, scores on the Wyman test of intellectual, social, and activity interests, scores on a test of play interests affording indices of masculinity, maturity, and sociability of interests, and a play information quotient, home ratings on the Whittier Scale by field assistants, and records of books read by subjects during a period of two months. Comparable data were obtained (where they were not already available) from *unselected* children for all of the above items except the medical examinations, the home ratings, and the information supplied by parents.

### Composite Portrait of the Gifted Child

The following highly condensed summary of the salient facts obtained in 1921-23 is presented as a composite portrait of the

group The method of composite portraiture is useful in calling attention to central tendencies and in providing a basis for generalization as a guide to educational practice It tells us what the typical gifted child is like, though of course it tells us little about the range of individual differences within the group This range is fairly wide, but it seems best to begin with a description of the child that will depict the typical rather than the atypical subject

First of all, the average member of our group is a slightly better physical specimen than the average child of the generality, the evidence obtained from the medical examinations, the health histories, and the anthropometric measurements is unanimous and conclusive on this point

Educationally, the average gifted child is accelerated in grade placement about 14 per cent of his age, but a three-hour achievement test of subjects in grades 2 to 8 showed that in mastery of the school curriculum he is accelerated about 44 per cent of his age The net result is that the average gifted child is held back two or three full grades below the level which he has already attained in school subjects

The achievement quotients of the gifted were not equally high in all school subjects For the fields of subject matter covered in our tests, the superiority of gifted over unselected children was greatest in reading, language usage, arithmetical reasoning, and in science, literature, and the arts In arithmetical computation, spelling, and factual information about history and civics, the superiority of the gifted was somewhat less marked However, in no school subject was the average achievement quotient of the group below 130, and no quotient in any subject for a single child was as low as 100

To what extent is formal education responsible for the high achievement quotients of the group? Among gifted children of a given age there was a wide range in the years and months of school attendance, thus providing a good opportunity to check years of schooling against achievement quotient For example, in our ten-year gifted group of 109 children the length of school attendance at the time the achievement tests were given ranged from less than two years to six years, but when correlations were computed between length of attendance and achievement quotients in the various school subjects *not a single correlation was found which differed reliably from zero* In high school this would

probably not be true, but in the earlier years, at least, length and regularity of attendance have surprisingly little effect upon the gifted child's achievement. The school, evidently, is failing to do its part in his education.

Another question answered by the achievement tests was whether the gifted child tends to be more uneven or one-sided in his abilities than the average child. Although there is a widespread tradition that such is the case, analysis of the achievement tests showed that the amount of unevenness in the subject-matter profiles of gifted children does not differ significantly from that shown in the profiles of unselected children.

The interests of gifted children are many-sided and spontaneous. They learn to read easily and read more and better books than the average child. At the same time, they make numerous collections, cultivate many kinds of hobbies, and acquire far more knowledge of plays and games than the average child of their years. Perhaps the most significant thing about the play preferences of gifted children is that they reveal a degree of interest maturity two or three years beyond their age norm. The test of knowledge about plays, games, and amusements showed that the typical gifted child of 9 years has more play information than the average child of 12.

A battery of seven character tests, selected from those devised by Cady<sup>3</sup> and Raubenheimer,<sup>4</sup> showed gifted children above average on every one. As compared with unselected children they are less inclined to boast or to overstate their knowledge, they are more trustworthy when under temptation to cheat, their character preferences and social attitudes are more wholesome, and they score higher in a test of emotional stability. On total score of the character tests, the typical gifted child of 9 years tests as high as the average child of 12 or 13.

On the Wyman interest test the proportion of gifted subjects exceeding the mean of unselected children was 90 per cent for intellectual interests and 84 per cent for social interests. In activity interests the means of the two groups were almost identical.

<sup>3</sup> Vernon M. Cady, *The Estimation of Juvenile Incurability*, Journal of Delinquency Monograph Series, No. 2 (1923).

<sup>4</sup> Albert S. Raubenheimer, "An Experimental Study of Some Behavior Traits of the Potentially Delinquent Boy," *Psychological Monographs*, Vol. XXXIV, No. 159 (1925).

Ratings on 25 traits by parents and teachers confirm the evidence from tests and case histories. The proportion of gifted subjects rated by their teachers as superior to unselected children of corresponding age was 89 per cent for mean of four intellectual traits, 82 per cent for mean of four volitional traits, 67 per cent for mean of three emotional traits, 64 per cent for mean of four moral traits, 61 per cent for mean of two physical traits, and 57 per cent for mean of five social traits. Only on one trait — mechanical ingenuity — were they rated as low as unselected children, and this verdict is contradicted by the results of mechanical aptitude tests.

There are two facts which stand out clearly in the composite portrait. (1) The deviation of the gifted subjects from the generality is in the upward direction for nearly all traits. There is no law of compensation whereby the intellectual superiority of the gifted tends to be offset by inferiorities along nonintellectual lines. (2) The amount of upward deviation is not the same in all traits. It is greatest in those aspects of behavior most closely related to intelligence: originality, intellectual interests, and ability to score high in achievement tests. In school work the gifted are best in the 'thought' subjects, whereas average children are at their best in subjects that make least demands upon conceptual thinking.

The reader is cautioned, however, to bear in mind the limitations of composite portraiture. Gifted children do not fall into a single pattern but into an infinite variety of patterns. One can find within the group individual examples of almost every type of personality defect, social maladjustment, behavior problem, and physical handicap, the only difference is that among gifted children the incidence of these deviations is, in varying degrees, lower than in the general population.

### Results of Follow-up Studies of the Gifted, 1940 and 1945

In 1923, 1924, and 1925, the subjects were followed up by means of information blanks sent to parents and teachers. In 1927-28, field workers visited the homes of nearly all of the subjects still living in California, retested them for intelligence, administered a variety of achievement tests, and brought the case histories up to date. Extensive data were obtained for subjects outside of

California by means of information blanks filled out by parents and the subjects themselves.<sup>5</sup> The next follow-up of the entire group was in 1936-37 and that also was carried out by information blanks sent to the subjects and their parents.

As space does not permit a summary here of the follow-up work completed prior to 1940, we turn next to the field study of 1939-40 and the mail follow-up of 1945.<sup>6</sup> The field study was conducted throughout California by Dr Nancy Bayley, Dr Helen Marshall, and Dr Ellen Sullivan, all of whom spent 10 months in giving a variety of tests to the subjects, their spouses, and their children, and in conferences with the subjects and their parents. The kinds of information obtained can be inferred from the material summarized in this section of our chapter.

By the end of 1940 we had succeeded in locating 97.7 per cent of the 1467 subjects who were still living and had gained the active cooperation of 96 per cent. At the time of the mail follow-up in 1945 we were able to locate 97.5 per cent of the group, despite dislocations caused by the war, and to secure the most essential items of information from 95.3 per cent of those located. No other sizable group of any kind — bright, average, or dull — has ever been followed from childhood far into adult life. Such a record would not have been possible but for the extraordinary cooperativeness of the subjects and the superb skill of our field assistants. Of the original group of 1528 subjects, only 33 had been lost by 1940, and in the interval between 1940 and 1945 five of these were located. Thus, the number lost stands at 28 with, however, some unexplored clues that may lead us to two or three more within the next year.

By 1940 the mean age of the living subjects was approximately 30 years, and by 1945 approximately 35 years. In the following summary on adult status we shall specify for each item of information whether the facts presented are as of 1940 or 1945.

### Mortality

Of 1500 gifted subjects for whom we have information, 61 or 4.07 per cent died between 1922 and 1940. The proportion was

<sup>5</sup> Barbara S. Burke, Dortha W. Jensen, and Lewis M. Terman, *Genetic Studies of Genius*, Vol. III, *The Promise of Youth* (Stanford University, California: Stanford University Press, 1939).

<sup>6</sup> Lewis M. Terman and Melita H. Oden, *op. cit.*

4.14 per cent for males and 3.98 per cent for females. According to the life tables of Dublin and Lotka,<sup>7</sup> based on mortality rate for the general white population, the expected mortality rate by age 36 for persons who were alive at age 11 was 5.37 for males and 4.68 for females, or a little above 5 per cent for the sexes combined. Thus the proportion of deaths in our total group was only about four-fifths of the expectancy for the general white population of comparable age.

Of the 61 deaths to 1940, natural causes account for 39, accidents for 15, and suicides for 6. The accident and suicide rates approximate those of the generality of comparable age. Of 13 known deaths between 1940 and 1945, war casualties accounted for 5.

### *General Health and Physique*

Funds were not available for a repetition of the medical examinations, but considerable information on health was obtained from the subjects themselves and from their parents. On a five-point rating scale nearly 91 per cent of the men and nearly 83 per cent of the women rated their health in 1940 as "very good" or "good." The rating "fair" was given by 7.3 per cent of men and 12.8 per cent of women, while only 1.9 per cent of men and 3.7 per cent of women rated health as "poor" or "very poor." In general, these self-ratings agreed rather well with the case history data. Both sexes exceeded in height not only the norms for the general adult population, but also the norms for college graduates.

### *Mental Health and Adjustment*

On the basis of extensive case history information we classified the subjects in 1940 and again in 1945 on mental health and adjustment into four categories: (1) satisfactory, (2) some maladjustment, (3a) serious maladjustment without psychosis, and (3b) serious maladjustment with psychosis. The ratings 1, 2, and 3a, though based on a large amount of specific information, are necessarily subjective and lack comparative norms. However, the rating 3b was based on actual hospitalization for some form of mental breakdown, and so can be compared with the insanity

<sup>7</sup> Louis I. Dublin and Alfred J. Lotka, *Length of Life* (New York: Ronald Press, 1936).

rate in the general population. The ratings were distributed as follows in 1940 and 1945

RATINGS	1940		1945	
	MALES	FEMALES	MALES	FEMALES
	%	%	%	%
1 Satisfactory adjustment	79.6	61.7	77.9	60.0
2 Some maladjustment	16.3	13.9	16.8	14.6
3 Serious maladjustment				
a Without psychosis	3.3	3.5	3.9	4.1
b With psychosis	0.6	0.6	1.3	1.3

In comparison with the best norms available for the generality of corresponding age, the insanity rate to 1945 for the sexes combined was slightly lower than Pollock's expectancy rate for the generality to age 35.\* The rate for nervous disorders other than insanity was low. Alcohol was a fairly serious problem with 15 per cent of the men and 0.9 per cent of the women. The delinquency rate, as might have been expected, was far below that of the generality.

### Adult Intelligence Status

In 1940 a difficult intelligence test, specially devised for the purpose, was given to 954 of the subjects who could be reached by the field workers, and to the spouses of those who were married. The test has a very high reliability and affords a superior measure of much the same kind of intelligence as is measured by the Stanford Binet or the Terman Group Test. How intelligent were the gifted subjects as adults?

For several reasons the question can be answered only approximately. From the best evidence available it appears that the group at the mean age of 30 years averaged between 2.1 and 2.5 standard deviations above the generality of adults, as compared with 3.15 standard deviations by which they exceeded their age norm when tested in childhood. A considerable part of the apparent drop can be accounted for by the fact that the test used in 1940 does not measure exactly the same functions as that used in childhood. Another part of the apparent regression is purely statistical and spurious, due to the fact that when a group of subjects has been selected on the basis of a high "found" score (in

\* Horatio M. Pollock, *Mental Disease and Social Welfare* (Utica, New York: State Hospitals Press, 1941).

stead of a "true" score), some average regression can be expected even if the test should be repeated only a month later.

The 1910 scores indicate that no subject had regressed to the intelligence of an average adult, and that probably no more than 10 per cent were as low as the 85th percentile of adults. The mean score of the group was nearly a standard deviation above the mean of college students, and a third of the group rated above the typical Phi Beta Kappa graduate, or the Ph D graduate, of Stanford University. Obviously, the group as a whole has remained superior despite the fact that some of the individual cases have not held their own. As a rule, the bright child remains bright.

### *Marriage, Divorce, and Fertility*

By 1945 approximately 84 per cent of both sexes had married, a far higher figure than has been found for the generality of college graduates.\*

The number divorced or separated by 1945 was 14 per cent of the men and 16 per cent of the women. Strictly comparable data for the generality are not available because census figures are based on present marital status and not on marital history. However, tests of marital happiness given in 1940 yielded higher mean scores than had been found for less selected subjects. Marital selection is indicated by the fact that the gifted subjects have chosen spouses whose average intelligence score is equal to that of the average Stanford graduate.

By 1945 the number of children born to the group was 1551. At that date the mean number of offspring for subjects who had been married five years or longer was 1.52. It is too early to predict whether the ultimate fertility of the group will be sufficient to maintain the stock. The mean IQ of 384 offspring given the Stanford-Binet was 127.7. The proportion of deceased among offspring of the gifted subjects to 1945 was 2.3 per cent, which is far below the rate for the general population.

### *Educational Histories*

By 1945 approximately 90 per cent of the gifted men and 86 per cent of the gifted women had entered college, and 70 per cent

\* Franklin L. Babcock, *The U S College Graduate* (New York: Macmillan Company, 1941).



of the men and 67 per cent of the women had graduated. These figures are about eight times as great as for the general population in California.

Of those graduating from college, 68 per cent of men and 60 per cent of women returned for graduate study. Graduate degrees were taken by 51.2 per cent of men graduates and 29.3 per cent of women graduates. The following numbers of subjects had taken various graduate degrees: M.A., 195, graduate law degree, 82, Ph.D. or other doctorate, 73, M.D., 54, Master of Business Administration, 21, graduate degree in engineering, 16, other graduate degrees, 43. The proportion taking each of these graduate degrees is many times the proportion that would be expected in a random group of subjects.

The average grade in college, while superior, was not always so high as might have been expected from a group of such marked intellectual superiority. Of those graduating from college, 77.5 per cent of the men and 82.5 per cent of the women had average college grades of B or better. Graduating "with honors" were approximately 30 per cent of both sexes.

About 20 per cent of both men and women attending college received one or more scholarship or fellowship awards during their undergraduate years. Graduate scholarships or fellowships were awarded to 26 per cent of the men and 13 per cent of the women taking graduate work. Graduate assistantships amounted to approximately \$350,000. In addition, however, the subjects during the undergraduate years alone earned about \$670,000 by outside work. This fact highlights the need for more scholarships and fellowships.

Despite the fact that the mean age at graduation was more than a year below the average, both the men and the women of the group participated in extracurricular activities to a greater extent than the generality of college students.

In view of the very superior record for the group as a whole, it is surprising — not to say appalling — to find that of those entering college 8 per cent of the men and 2 per cent of the women "flunked out" one or more times. That their failure was not usually due to lack of ability is shown by the fact that nearly all of those disqualified made high intelligence scores in 1940 and by the fact that nearly half of them later re-entered and graduated. At

least a fourth of them even completed their work for a graduate degree

A majority of those whose grades in college were mediocre or below passing were interviewed regarding the cause. One of the most common explanations given by the subjects was that in the grades and high school they had made high marks without doing any serious work and that in college they underestimated the amount of work necessary to 'get by.' Several stated that in high school they had developed feelings of inferiority because of being younger than their classmates, and that on entering college they deliberately decided to "go all out" for popular activities and the pursuit of leadership. Some of these cultivated an adult swagger, lied about their ages, and affected complete indifference to scholastic marks. A few said that they became disgusted with college because of instructors who discouraged initiative and permitted no latitude of opinion on controversial issues. There were a good many instances in which the poor record could be accounted for by lack of proper guidance in the selection of a major field. On changing their major to a field more in line with their interests such students often became outstanding in their achievement. Other factors were personality maladjustment, general lack of ambition, and overwork for self support.

### *Occupational Status and Earned Income*

A quarter century after the subjects were selected for study solely on the basis of a high intelligence score we find almost half of the men engaged in one or another of the professional occupations. This is eight or nine times the proportion so classifiable in the California generality of employed males (U.S. census, 1940). Approximately 80 per cent of the men are in the two highest occupational groups: I, the professions, and II, the semiprofessional and higher business occupations. In the generality only about 14 per cent are in these two groups. Occupational Groups IV to VII on the Minnesota Occupational Scale account for about half the generality of employed males, but for only 4 per cent of the gifted men (of whom not one in 1945 was in either Group VI or Group VII). During the depression when 15 to 20 per cent of employable males in California were unemployed, the proportion of unemployed among our gifted men was not over 1 per cent.

Nearly all of the single women who had completed their schooling were employed full time in 1940, as were also close to a third of the married women. Office and business occupations were the most frequent, accounting for 35 per cent; teaching below college level was next with 21 per cent; and college teaching and professions requiring a graduate degree (such as law, medicine, psychology, etc.) accounted for 11 per cent. There were 29 per cent in other professional or semiprofessional occupations and 4 per cent in miscellaneous nonprofessional occupations.

In earned income the contrast between the gifted group and the generality is significant but less spectacular. For the calendar year 1944 the average earned income of the gifted men was \$4700; of the employed women, \$2600. At that time the average age of the subjects was some 20 years below the age when maximum earning capacity is ordinarily attained. Yet, despite their relative youthfulness, 13.5 per cent of the men reported earned incomes of \$10,000 or more. The proportion of gifted men with earned income of \$5000 or over in 1944 was more than six times as great as the 1944 proportion reported by the Alexander Hamilton Institute for employed males of all ages in the United States (45.4 per cent as against 7.4 per cent). The earnings of gifted women employed full time are closer to the earnings of the generality than are the earnings of gifted men.

We would emphasize, however, that occupational classification and earned income are inadequate criteria of life success. Apart from the fact that there is a considerable range of success within each occupational class, one must allow for differences in educational opportunity and for subjective factors determining occupational preferences. With respect to earned income, many of the great men of history would have made at age 35 a poor showing in comparison with the average man in the gifted group. Thoreau, for example, probably earned fewer dollars in his entire lifetime than the average earned by our gifted men in the single year 1944.

### *Publications and Patents*

By the end of 1945 the group had published about 90 books or monographs and approximately 1500 articles which appeared in scientific, scholarly, or literary magazines. The publications, both

major and minor, cover a wide range. The books include 8 college textbooks (4 of which have been translated into foreign languages), 11 volumes of fiction and 3 of poems, 2 medical treatises, 2 books of popular science, 5 in the social sciences, and several storybooks for children.

More than half of the 1500 articles are of scientific nature and are widely distributed among the physical and engineering sciences, the medical and biological sciences, and the social sciences (including psychology). The others include articles on current events and literary topics, numerous poems, and 50 or more short stories.

Patents granted to members of the group number more than 100. Nearly half of these were granted to two men, one of whom is in radio engineering and the other in chemistry. Two patents have been awarded to one of our women, both in the field of metallurgy.

### *Examples of Achievement*

By 1947 some 21 members of the group were listed in *American Men of Science* and 7 in *Who's Who in America*. One has been elected to membership in the National Academy of Sciences—about the greatest honor, short of a Nobel prize, that can come to an American scientist. A few specific examples follow, selected from many which could have been given.

A physicist who is director of one of the great laboratories devoted to the applications of atomic energy.

A historian who was director of an important war project, in which position he directed the work of more than a hundred social scientists.

A professor of physiology who was co director, during the war, of the most important investigation that has ever been made on the physiological, biochemical, and psychological effects of prolonged semi starvation.

A professor of engineering who served throughout the war as director of a government research laboratory which employed hundreds of scientists and technicians, spent millions of dollars, and created devices that definitely shortened the war.

Among the men who have taken medical degrees, several have achieved a national reputation. One is a widely known plastic surgeon. One is described by his colleagues as the most productive researcher in the medical school in which he teaches. One is head of the department of public health in a leading medical school. Another at the age

of 33 was chief of psychiatric therapy in one of the great combat areas of the war and later made the official psychiatric examinations of the top ranking Nazis held for trial at Nuremberg

A professor of pharmacology had published more than a hundred research contributions before the age of 35

One of our psychologists is director of a great research institute and is generally regarded as among the country's ablest psychologists of the younger generation

One of our scientists is an oceanographer who was chief of a technical staff at the Bikini atomic bomb explosions. Another member of the group participated in this event, and a third was invited to be present but was unable to accept

One of our West Point graduates is a brigadier general in the Army Air Force

One of our two members of the State Department has been promoted to the position of chief for one of the most critical areas in the entire world

Two of the men have won national recognition as writers of fiction. One of these has published seven detective novels. The other has published three novels and scores of articles and short stories based upon technological themes

One of our men is a relatively young motion picture director who is recognized as among the most talented in the country

Two men have risen to positions of importance in the aircraft industry, one as chief structural engineer for a leading airplane manufacturing firm, the other as chief legal counsel for another firm

Far fewer women than men in our group have made records of outstanding achievement. This is hardly surprising in view of the fact that only a small minority of them have gone out wholeheartedly for a career. One, however, is a gifted poet, two are successful novelists (one of whom is also a well known journalist), another is a talented actress and the author of a successful Broadway play

Two women are missionaries, one in the Far East, the other in Africa. The latter has translated a volume of religious literature into an African language.

Six of our women hold the M.D. degree and 13 the degree of Ph.D. Several of these have authored numerous research publications. Among the ablest of the women scientists are a metallurgist, a bacteriologist, a biochemist, and a psychologist. Several other women are having successful careers as psychologists without having completed their work for the doctorate

A good many of the women have made their most notable achievement in the selection of a mate. Two of the husbands are eminent musicians, and several others have won national recognition in the physical, biological or social sciences.

### *Achievement in Contentment*

Our discussion so far has been concerned with the achievement of eminence, professional status, and recognized position in the world of human affairs. But these are goals for which a large proportion of highly intelligent men and women do not consciously strive. Many of them ask nothing more of life than happiness and contentment in comparative obscurity. Since we have no yardstick for measuring the intangible achievements that make for contentment, we venture no estimate of the success of our gifted subjects in this quest. We do not even know whether they are more happy or less happy than the average person in the generality. We do know that they are better fed, better housed, and better doctored than the average person, that they are in a position to care better for their children, and that they have less reason generally to be anxious about the future. Such things cannot insure happiness, but they would seem to favor it.

### *Factors in the Achievement of Gifted Men*

The method of investigating such factors was to compare the most successful men with the least successful in order to discover what variables discriminate between the two extreme groups. The study has been limited to men because of obvious difficulties of estimating the success of the women who have not gone out for a career.

Three psychologists independently examined the records of 730 gifted men who were 25 years old or older and from these selected the 150 most successful and the 150 least successful, roughly the top and bottom 20 per cent. The primary criterion of success was "the extent to which a subject had made use of his superior intelligence." Earned income was given little weight except where it seemed clearly indicative of success as above defined. The two groups have been designated as A and C. Comparison of the groups on some 200 items of information obtained between 1922 and 1940 brought to light many interesting facts, of which only a few can be summarized here.

The educational and occupational records of these two groups presented a vivid contrast. Of the A's, 90 per cent graduated from college; of the C's, only 37 per cent. Approximately 76 per cent

of the A's but only 15 per cent of the C's completed one or more years of graduate work. The A's were more often accelerated in school

In professional pursuits were nearly 70 per cent of the A's as compared with 9 per cent of the C's. Although salary had been given little weight in the success ratings, the average earned income of the A's in 1940 was more than twice that of the C's.

Turning to the childhood records and test scores of the two groups, we note first that during the elementary school years the A's and C's were almost equally successful. Their average school grades were about the same, and the average scores on the achievement tests were only a trifle higher for the A group. In high school the groups began to draw apart as a result of lower grades in the C group, but it was not until the college period that the slump of this group assumed alarming proportions. The slump cannot be blamed upon extracurricular activities, for these were almost twice as common among the A's as among the C's, nor can much of it be attributed to lower adult intelligence.

A number of significant differences between the groups were found in the childhood data on emotional stability, social adjustments, and various traits of personality. All the 1922 trait ratings except those for health averaged lower for the C group. The trait ratings and case-history data obtained from parents and teachers in 1928 gave even larger differences between the groups.

In physical health, no significant differences between the two groups were found in 1922, 1928, or 1940. Mental health was reliably better in the A group in 1928 and much better in 1940.

Evidence of social maladjustment in the C group increased steadily from 1922 to 1940. Both in high school and college, leadership was far more often displayed by members of the A group.

The marriage rate for the C's was lower than for the A's, and the incidence of divorce among the C's was more than twice that of the A's. The groups differed strikingly with respect to the women they married. More than half of the A wives but only a quarter of the C wives were college graduates.

The inferior adjustment of the C's was further indicated by their more frequent unemployment and by change of jobs without improvement in their position. Three times as many C's as A's reported that they had drifted into their jobs.

Some of the most interesting A-C differences were brought to light by self-ratings by the subjects, ratings on the same traits by their wives and parents, and ratings on certain other traits by the field workers. The subjects, their wives, and their parents showed remarkable agreement in rating the A's far higher than the C's on perseverance, self-confidence, integration toward goals, and absence of inferiority feelings.

Everything considered, there is nothing in which the A and C groups present a greater contrast than in drive to achieve and in all-round social adjustment. Contrary to the theory that great achievement is usually associated with emotional tensions which border on the abnormal, in our gifted group superior success is associated with stability rather than instability, with absence rather than presence of disturbing conflicts — in short, with well-balanced temperament and freedom from excessive frustration.

## The Education of Gifted Children

Although the pedagogical procedures best adapted to gifted children have never been adequately worked out, it would be impossible to follow a large group of superior subjects from childhood into adult life without arriving at some convictions regarding what is wise to do or to avoid. The following suggestions, selected from many which could be given, indicate some of the major impressions that have grown out of our experience.

### *Prodigy Making*

Some have expressed the belief that any child can be made a prodigy by intensive mental culture during the first four or five years of life, but we have uncovered no factual data that support such a view. Such intensive culture does not appear to be at all necessary for the fullest development of the child's natural ability. Many of the most successful of our gifted subjects had no formal instruction of any kind until the age of 6, 7, or even 8 years. One boy who did not know his letters at the age of 8 years graduated from a university at barely 20 with the highest grades in his class of several hundred.

However, this case is not mentioned in support of the view that children should not learn to read till the age of 7 or 8 years. There



is no reason why a child should not do so at 5 or even 4 years, if he wants to and can accomplish it with a minimum of instruction. Early reading will do no harm so long as it is not permitted to crowd out a host of other interests just as important.

In deciding upon the time for any particular kind of instruction, the highest wisdom is to follow the lead of the child's interests. Forced culture breeds an unnatural priggishness and in other ways leads to disappointment. Prodigy making by such methods is at best a sorry business, and at its worst is little less than criminal.

### *Answering Questions*

The gifted child not only asks more questions than the average child, but he asks more intelligent ones and asks them more insistently. This is the opportunity of teachers. Knowledge acquired when it is wanted is quickly assimilated and becomes a permanent part of the mental structure. Teachers who take the innumerable questions of the child seriously and answer them as fully and truthfully as his intelligence will justify or as their own information will permit are satisfying the most important of the child's educational needs. When a question is asked which the teacher cannot answer, a good plan is to have the child look up the answer himself with a little direction as to where and how he may be able to find it. For the teacher to make a pretense of knowing what she does not know, or to give an answer which is incorrect or inexact, is worse than to ignore the child's question altogether.

### *Hobbies*

An outstanding characteristic of gifted children is the number and variety of their hobbies, many of which have large educational value. Among those which can be recommended most heartily are electrical experimentation, photography, work with engines and motors, chemical experiments, boat making, shop work of various kinds, crop growing, athletics, and collections. Many a boy learns more physics in working with his motor or radio outfit than the high school can teach him in a year. Many another lays a solid foundation of biological knowledge by such hobbies as bird study, butterfly collecting, animal raising, etc. Geography, mineralogy, physics, chemistry, botany, and zoology

are all subjects in which the bright child can make rapid progress by means of collections or amateur experimentation. Such hobbies are in a majority of cases as suitable for girls as for boys, especially photography, nature study, collections, and crop growing.

Children who do not have hobbies should be encouraged to develop them. This can best be done by giving them some acquaintance with the hobbies of other children. When a worthwhile interest has begun to develop, it should be encouraged. Hobbies lose a large part of their educational value if one succeeds another too rapidly. Yet some gifted children keep three or four going at the same time for long periods, and profit from all. Others seem to gain more from one or two continued throughout childhood and perhaps even into adult life. In the case of several of our subjects a childhood hobby led directly to a vocation.

### Reading

By the age of 9 or 10 years the gifted child should be doing a wide variety of reading. A majority will do so without special encouragement, provided plenty of books are accessible, but a few will not. There is a vast quantity of suitable literature available for children of all ages and it is an important function of the school librarian and teacher to help them find it. What is suitable depends as much on the child's interest as on literary quality. The latter, we are inclined to think, is sometimes overstressed, especially by some librarians and teachers of English. Other things being equal, good literature is of course preferable to mediocre, but there are many books of *questionable literary quality* which greatly appeal to children and do them no harm. In the beginning, at least, quantity and variety of reading are almost as important as quality. Many of our subjects by the age of 12 years had read hundreds of books, good, poor, and indifferent, and among these readers are some who in later years have shown considerable literary ability. Once a liking for books has been developed, the gifted child will gradually come to prefer the better to the poorer.

The child of superior intelligence is likely to show a preference for books which are usually preferred by older children. This is entirely natural and should not be discouraged. If a gifted 11-year-old can read a play of Shakespeare or a good historical novel

and enjoy it, there is no reason why he should not do so. On the other hand, no pressure should be exerted to force the child's reading interests to a precocious maturity.

To what extent should the reading of comics be discouraged? It is our opinion that their baleful influence on children has been somewhat exaggerated by recent critics. Surveys in schools have shown that gifted children as a rule read more of them than do average children, and that they rarely suffer any apparent harm from them. Of course there are good comics and bad. In the latter class are the gruesome, the cruel, and the blood-and-thunder type. If the reading of these is discouraged, and if the better types do not too greatly monopolize the child's time, there is usually no need to worry about even a strong liking for comics. In a majority of cases interest in them will gradually wane as the child matures.

### *The World of Reality*

Preoccupation with books should not be allowed to cut the child off from contacts with reality. Interest in every aspect of the material environment should be encouraged, including trees, animals, flowers, industrial processes, museums, zoological and botanical gardens, etc. Local industries, state legislatures, and points of historical interest should be visited whenever it is possible, and in various ways the child's attention should be directed to the things that are going on around him.

In this connection, the value of work and of personal responsibility should be emphasized. Parents should be encouraged to give the child regular home duties. It is a great mistake to allow the gifted child to develop an attitude of superiority toward the everyday affairs of the household or of the school. The mother of a certain gifted boy of 8 years still continued to dress and undress him, to give him his bath, and to do for him all sorts of things which sensible mothers teach their children to do for themselves at an early age. Her excuse was that a boy so gifted should have all his time for creative thinking! Children of superior mentality can be taught to look after themselves at an earlier age than average children, for the good of their souls, as well as in the interests of social and moral development, gifted children should be permitted to assume suitable personal responsibilities.

### *Social Development*

In every possible way the child should be encouraged to associate in play and other activities with children who are not too far from his own age. Nothing can take the place of such experience. Children who are too deprived of it rarely become leaders and are likely to develop traits of character which make them seem 'queer' and render them unacceptable to others. Our data show that the gifted individual who cannot understand people and mingle with them on equal terms is likely to be less successful than the person of more moderate talents who is socially normal. He is also likely to be unhappy. After the age of 5 or 6 years, the gifted child should spend at least 10 to 15 hours a week in free play with other children.

If there is incessant preoccupation with books, the amount of exercise and outdoor life is likely to be inadequate. The habit tends to run in a vicious circle. The love of reading brings curtailment of outdoor play, and the more time the child spends with his books the less he cares for the activities in which other children engage. For the sake both of health and of social development, the matter should be taken in hand at an early age, before sedentary habits and the preference for solitude have become fixed. Such organizations as the Boy Scouts, Girl Scouts, Campfire Girls, athletic teams, or Sunday school societies are invaluable for social development. The child who is deprived of the opportunity to play is not only being robbed of his childhood, he is also being deprived of his chance to become a normal adult.

### *Study Habits*

Because he is usually able to accomplish the ordinary school tasks without serious effort, the gifted child runs the risk of developing habits of intellectual slackness. He may come to take a certain pride in getting his lessons quickly or in making plausible recitations without adequate preparation. The remedy is for home and school to unite in setting a higher standard of school performance for such children. Gifted boys and girls should constantly be held responsible for the best work they can do, not merely for the average work of the class. Everything possible

should be done to cultivate in the gifted child a real pride in accomplishment.

### *The Problem of School Acceleration*

There has been much controversy regarding the extent to which children of high IQ should be allowed to become accelerated in school. At one extreme is the opinion that the gifted child should be given a grade placement corresponding to his mental age, at the other extreme are those who would base promotions on the calendar without regard to mental ability.

An alternative is to provide special classes with an enriched curriculum for the gifted. Such classes have been established in many cities during the last three decades, and in our opinion they have thoroughly demonstrated their value. However, in view of the fact that special classes are at present available to only a small minority of gifted children, we are usually faced by the choice between acceleration and nonacceleration in grading systems designed primarily for the average child. Attempts are sometimes made to enrich the program for especially bright children in the ordinary classroom, and such programs at their best can be very helpful. Unfortunately, the so-called enrichment often amounts to little more than a quantitative increase of work on the usual level.

The most common arguments in favor of acceleration are that it improves the child's motivation, prevents him from developing habits of dawdling, and later on allows him to complete his professional training earlier, and to make an earlier marriage. On the other side it is argued that grade skipping aggravates the child's problem of social adjustment, promotes bookishness, is dangerous to physical or mental health, and leaves gaps in the child's academic knowledge and skills. Although our data do not afford an accurate measure of all these alleged effects, they do furnish evidence of considerable value with respect to some of them.

We have compared our accelerates and nonaccelerates on many variables in their case histories to see what light the facts might throw on the effects of grade-skipping. Subjects graduating from high school before the age of 16-6 were classed as accelerates, those graduating after this age as nonaccelerates. The groups pro-

or higher should be promoted sufficiently to permit college entrance by the age of 17 at latest, and that a majority in this group would be better off to enter at 16. Acceleration to this extent is especially desirable for those who plan to complete two or more years of graduate study in preparation for a professional career. Although there are some children who could be made ready for ninth grade at 9 or 10 years, and for college at 13 or 14, such extreme instances of acceleration in our gifted group have usually had unfortunate results.

### *Choice of Vocation*

One should not be too early concerned about the gifted child's future vocation. Until his abilities and interests have had time to mature, the right vocational choice cannot be made, unless by chance. During the period of rapid mental growth one interest develops after another, only to disappear and be succeeded by something else. This is usual and proper. Each wave of interest, if made the most of while it lasts, adds its own special contribution to the making of a many-sided man or woman. A common mistake is for parents to interpret the onrush of interest in drawing or writing or bird study as an indication that the child should forthwith begin preparation for a life career in art, authorship, or biology.

The occupational preferences which the child spontaneously expresses from time to time may be extremely fickle or relatively abiding. It is usually better neither to discourage such preferences nor to take them too seriously. With a majority of gifted children, nothing is to be gained and much may be lost by "casting the die" early. Such children as a rule have fairly all round ability. Many of them, for example, could probably succeed almost equally well in law, medicine, teaching, engineering or business. The final choice will often hinge upon interests rather than upon a preponderance of specialized talent for this or that vocation. In the large majority of cases the wisest course to pursue with the gifted child is to give the broadest possible school training, encourage the greatest possible number of intellectual contacts, and then wait for the settling and shaping effects of maturity. By the age of 16 or 17 a vocational interest test can often delineate the area in which an occupational choice should be made. In our

opinion the most valuable test of this kind is the one devised by E. K. Strong<sup>10</sup>

## Summary

The study we have described was designed to discover what physical, mental, and personality traits are characteristic of gifted children as a class, and what sort of adults they become. The subjects investigated were selected by methods which insured that they would be fairly representative of the top 1 per cent of the general school population in IQ. All but a few members of the group were first tested and studied in 1921-22. The follow-up has included two extensive field studies, with retests, in 1927-28 and 1939-40, and several follow-up studies by mail (the latest in 1945). Some of the most significant findings are as follows:

1. The typical gifted child is superior not only in intelligence but in practically all the traits that were studied, including school achievement, versatility, character traits, play information, social adjustment, and physique.
2. As adults the group as a whole averaged in tested intelligence about 1.0 S.D. above the average of college students, and between 2.0 and 2.5 standard deviations above the average adult. None of the subjects has regressed to average adult intelligence, but perhaps 10 per cent have regressed from the 99th percentile to the 85th percentile or below.
3. The mortality in the group has been only about four fifths of the expectancy for the general population of comparable age. The insanity rate has been low, and serious maladjustment (other than insanity) amounted to only 4 per cent by 1945.
4. Nearly 90 per cent of the group have had some schooling above the secondary level, and about 70 per cent have graduated from college. Two-thirds of the men and three fifths of the women who graduated from college have had one or more years of graduate work.
5. The school records in general have been superior at all educational levels, but a good many of the subjects have failed to achieve in proportion to their intellectual ability. Of the numerous causes responsible for such failure, one of the most important has been the absence of educational procedures adapted to children of exceptional ability.

<sup>10</sup> Edward K. Strong, *Vocational Interests of Men and Women* (Stanford University, California: Stanford University Press, 1943).

6. Adult success of the group, whether measured in terms of educational or vocational achievement, has been on the whole outstanding. Compared to a random population of similar size, the gifted group, selected in childhood solely on the basis of IQ, has furnished many times the usual proportion of doctors, lawyers, university teachers, engineers, and leaders in business or other fields. Even the least successful 20 per cent of the group do not compare badly with the average run of college graduates. The prognostic significance of superior childhood IQ has thus been established beyond question.
7. Finally, we have suggested a number of ways in which the potentialities of gifted children can be more fully realized by home and school training. In this connection we have especially emphasized the importance of curriculum enrichment, special classes, vocational guidance, and a greater amount of school acceleration.

Since this chapter was written, funds have been obtained for a field follow-up of the group in 1950-51 similar to that of 1940. This will involve retests of the subjects and their spouses, Binet tests of their offspring, and the collection of extensive case-history data.



## THE CONTRIBUTIONS OF LETA S. HOLLINGWORTH TO THE STUDY OF GIFTED CHILDREN

While Professor Lewis M. Terman on the Pacific Coast was turning the first furrows in the field of the genetic study of mentally superior children, Professor Leta S. Hollingworth on the Atlantic Coast was preparing to cultivate the field from the other direction. It was in these simple agrarian terms that Professor Hollingworth thought and often spoke of her task as similar to that of her colleague across the country.

The work of both of these pioneers in differential psychology exemplified the highest standards of educational research. Both were driven by an unquenchable thirst for facts. They both placed great reliance upon quantitative and objective instruments of measurement and insisted upon systematic and exact recording of data. Both planned and carried through to completion extensive studies of their subjects. To the children whom they were studying they were skilled counselors; in communicating their findings to classes of advanced graduate students, they were master teachers. And finally, both made important and lasting contributions to the literature of differential psychology.

Although the areas of investigation, as well as the underlying purposes, of both Professor Terman's and Professor Hollingworth's studies were essentially the same, the procedures they followed in the conduct of their studies differed considerably. Professor Terman collected and analyzed the data for a large group of nearly one thousand gifted subjects. The major purpose of his original in-

vestigation was "to determine in what respects the typical gifted child differs from the typical child of normal mentality"<sup>1</sup> The unique character of Professor Hollingworth's work lay in the highly organized educational experiments which she herself conceived, planned, and supervised in every detail up to the time of her death Professor Hollingworth contributed important psychological facts concerning the general nature of the mentally superior, but her main concern was to determine what constitutes "proper educational provisions for them She worked intensively with two separate groups of gifted children, the total number in both groups somewhat exceeding one hundred During the course of each of her experiments, she observed the children almost every school day She maintained contact with the children in her first experimental group for the remaining years of her life

Professor Hollingworth began her work with superior children in 1916 At that time, she held the position of clinical psychologist at Bellevue Hospital where she was testing mentally inferior individuals for commitment by the courts At Teachers College, Columbia University, she taught a course in the psychology of sub-normal children In order to show the members of her class the contrast between the workings of inferior and superior minds, she gave a demonstration of an individual intelligence test to a child whom his teachers regarded as superior This child achieved the astounding IQ of 187 As a result of further work with this boy, Professor Hollingworth's attention was directed away from the lower end to the top level of the distribution curve of intelligence

In her capacity as a clinical psychologist, Professor Hollingworth's help was solicited more and more for mentally superior children who had educational or personal problems Her work with a seven year-old boy who was placed in the fifth grade but whose ability was still insufficiently challenged brought about her association with Dr Jacob Theobald then Principal of Public School 165, Manhattan, and later a member of the Board of Superintendents of New York City The outcome of their perplexity over the proper educational provisions for this boy led to the first of Professor Hollingworth's experiments with gifted children

<sup>1</sup> Lewis M. Terman and Others *Genetic Studies of Genius Vol I Mental and Physical Traits of a Thousand Gifted Children* (Stanford University California Stanford University Press, 1925), p. vi.

## Definition of the Gifted

For her own experimental work, Professor Hollingworth defined the gifted as children who are in the top 1 per cent of the juvenile population in *general intelligence*. She held the view that *general intelligence* is the "power to achieve literacy and to deal with its abstract knowledge and symbols."<sup>2</sup> She was convinced that with this power of *general intelligence* nearly all mental abilities are positively correlated, and that upon it success in scholastic work primarily depends.

Professor Hollingworth stated that her definition of an intellectually gifted child as one standing within the top centile was "quite arbitrary," and added, "We could just as well choose the top two per cent to be called 'gifted' or the top one-half of one per cent."<sup>3</sup> Her foresight in recognizing that this definition of the intellectually gifted was arbitrary has been shown in the later educational provisions for the intellectually superior in New York City, where there has been considerable irregularity in placing the percentage boundaries. Children in the top 2 per cent of the school population are now eligible for placement in the special classes if they meet other qualifications.

## Identification of the Gifted

More than twenty four centuries ago, Plato pleaded for the identification of the able to act as guardians of his ideal state in words which were great favorites of Professor Hollingworth. She repeated them on many occasions when she spoke on the subject of gifted children. These words were

We must watch them from their youth upward and make them perform actions in which they are most likely to forget and to be deceived and he who remembers and is not deceived is to be selected, and he who fails the trial will be rejected. This will be the way.

Professor Hollingworth highly regarded the individual intelligence scales as a pioneer means of identifying mentally superior children in their early childhood. She wrote, "It is the most sig-

<sup>2</sup> Leta S. Hollingworth, "How Should Gifted Children Be Educated?" *Baltimore Bulletin of Education*, Vol. L (May, 1931), p. 195.

<sup>3</sup> *Ibid.*, p. 196.

nificant contribution of psychology to education, in this century . . . that we are enabled to know the mental caliber of a human in his early years."<sup>4</sup>

Repeatedly Professor Hollingworth emphasized the importance of identifying a gifted child as early in his life as possible. She contended that the "problems of the gifted pertain chiefly to the period before twelve years of age, for the problems of the gifted person tend to be less numerous as he grows older and can use his intelligence independently in gaining control of his own life."<sup>5</sup> And at another time, she said, "My direct contacts with the education of gifted pupils have all been on the level of the elementary school. I consider that the problems are most urgent at this level, because it is in the primary and elementary school that the very intelligent child most especially needs a supplement to the standard curriculum."<sup>6</sup>

Professor Hollingworth regarded an *individual* intelligence scale in the hands of a competent psychologist as the most important single tool for identification of the gifted. She wrote, "The only way to identify these gifted children with certainty is to apply reliable and valid intelligence tests. Nothing can take the place of such tests in making a census of the gifted." And again, "Mental tests will predict with a high degree of reliability future scholastic success. They are, therefore, tests of educability."<sup>7</sup>

Professor Hollingworth also considered mental tests to be the most democratic procedure yet devised for selecting persons for special educational provisions. She felt that the mental scale provided greater equality of opportunity than had existed in the past; for before mental tests became available, the financial status of the parents was almost the sole determiner of who should receive unusual educational advantages.

<sup>4</sup> Leta S. Hollingworth, "Problems of Relationship Between Elementary and Secondary Schools in the Case of Highly Intelligent Pupils," *Journal of Educational Sociology*, Vol. XIII (October, 1939), p. 102.

<sup>5</sup> Leta S. Hollingworth, "The Child of Very Superior Intelligence as a Special Problem in Social Adjustment," *Annals of the American Academy of Political and Social Science*, Vol. CXLIX, No. 3 (1930), pp. 151-160. Also in *Mental Hygiene*, Vol. XV (January, 1931), pp. 3-16.

<sup>6</sup> Leta S. Hollingworth, "Problems of Relationship Between Elementary and Secondary Schools in the Case of Highly Intelligent Pupils," *op. cit.*, p. 90.

<sup>7</sup> Leta S. Hollingworth, "How Should Gifted Children Be Educated?" *op. cit.*, p. 195

The preceding statements are not to be interpreted as meaning that Professor Hollingworth felt that a single test score could or would reveal knowledge of the "whole child." In her own selection of pupils for her educational experiments, she paid serious attention to such factors as physical and emotional maturity. She put a great deal of weight on the nominations of principals and teachers, and on personal interviews with children and parents. To her, among important criteria of maturity was the ability of the child to travel by himself to school. She consistently refused to take into her classes any child who was obviously immature for his age. Also children who were lacking in health or physical stamina were not selected for the experiment.

During the period in which she was working, she thought that no usable scales for measuring emotional or character traits were available. She believed that valid judgment of these qualities necessitated direct observation of pupils in a variety of situations. Therefore, such observations were made throughout both of her experiments. Particularly during the course of the Public School 500, Speyer School experiment, pupils who repeatedly showed themselves to be inadequate in emotional maturity, social adaptability, perseverance, or in other ways that interfered with their own progress or the progress of the group were transferred back to a regular school situation.

Thus, contrary to popular opinion, selection of children for her experimental classes was made on a much broader basis than intelligence alone. While a level of mental ability as measured by an IQ (S-B) of 130 or above was a minimum requirement for admission, other factors to be considered either in the initial selection or in the retention of children in the school were social adaptability, emotional maturity, and qualities of physical fitness.

### The Need for Educational Provisions for the Mentally Superior

Terman's intensive research studies have shown that gifted children make up the one most retarded group in the public schools, when mental rather than chronological age is the criterion of retardation. He found that *although in actual knowledge of the subject matter taught (as measured by achievement tests) the*

typical child is accelerated over 40 per cent, in actual grade placement he is accelerated by only 14 per cent of his age.<sup>8</sup>

In spite of these findings, acceleration through the grades has probably been the device employed most frequently for the education of the mentally superior. The most serious objection to acceleration is the inevitable physical and social maladjustments that arise because of the child's being placed with children chronologically much older. The handicaps have perhaps been best described by Professor Hollingworth:

If the child be accelerated in the regular classes to the point where he can function with real interest intellectually, he will be out of harmony with the classroom situation in other important respects. A child of eight years graded with twelve-year-olds is out of his depth socially and physically, though able to do intellectual work as well as they can. Classroom furniture will not be adapted to his size; he will always be regarded as a nuisance in athletic contests; it will be doubtful how to treat him at class parties; his handwriting will be poor and slow in contrast with that of his much older classmates; he will be emotionally immature in comparison with those about him.<sup>9</sup>

Another handicap resulting from acceleration is the child's loss of certain fundamental knowledges and skills as the child "skips" through the grades. In his subsequent education, he may never encounter the basic content he has missed. And, because of his dislike for routine, the gifted child rarely takes time, on his own initiative, to master such material. One provision that is sometimes employed for the educational care of the mentally superior is flexible promotion or advancement to a higher grade only when a pupil has completed satisfactorily a prescribed unit of work. While this form of acceleration avoids the loss of knowledge of basic subject matter and skills through skipping, it does little to correct the adjustment problems caused by chronological age displacement.

Yet another provision for the education of the mentally superior is the introduction of individual enrichment activities into the regular classroom. The value of this provision depends to a large extent upon the nature of the special activities. Too often the

<sup>8</sup> Lewis M. Terman and Others, *op. cit.*, p. 308.

<sup>9</sup> Leta S. Hollingworth, "Personality Development of Special Class Children," *University of Pennsylvania Bulletin, Eighteenth Annual Schoolmen's Week Proceedings*, Vol. XVIII (June 20, 1931), p. 443.

provisions in the regular classroom for the mentally superior are essentially only activities which help the teacher and keep the gifted child occupied. Again, individual enrichment activities for the mentally superior are simply a greater amount of the same material as that given to the total group of children. For example, if the class is assigned ten problems in arithmetic, the rapid learner may be required to do fifteen of *the same type*. Other tasks often involve such activities as running errands, acting as monitors in the hall, tutoring the academically slow students, or keeping the blackboards and erasers and other physical aspects of the schoolroom in order. Not only are these activities useless in furthering knowledge and positive skills in the rapid learner but they are a form of exploitation. Such procedures not only add nothing positive to the educational achievements of the gifted but go far in developing an attitude of indifference or active dislike for school.

A true enrichment curriculum, which provides for the development of essential skills or understandings and at the same time offers an opportunity to exercise initiative and originality commensurate with ability and interest, is the most desirable type of educational program for every child in our educational system. The successful achievement of such a program in the regular classroom is difficult if not impossible in large classes where there is a wide range of ability and where the teaching load is already so heavy that the teacher cannot cope with additional problems of curriculum research and planning. It is unfortunate, however, that when the goal of individual education is not achieved, the gifted suffer most.

Professor Hollingworth was convinced that homogeneous grouping offers the most effective type of education in populous centers where the numbers of gifted children within relatively limited geographical areas and under one school system are large enough for the organization of special classes. It is important to emphasize that Hollingworth did not interpret homogeneous grouping as advocating the sectioning of all students in the educational system on an ability basis. She repeatedly stated that in the distribution of intelligence only the extremes are so far removed from the average that the regular school cannot meet their needs. In this connection she said, "We find that children up to

about 140 IQ (S-B) tolerate the ordinary routine of the school quite well, being usually a little young for grade through an extra promotion or two, and achieving excellent marks without serious effort";<sup>10</sup> and again in relationship to the problem of social adjustment, she wrote, "Play interests of gifted children who test between 130 and 145 IQ (S-B) tend to be similar to those of unselected children of corresponding ages."<sup>11</sup>

A misinterpretation of the concept underlying homogeneous grouping has been that it implies segregation of the gifted, practically to the point of isolation. While she was in favor of ability grouping for the purpose of pursuing intellectual activities and learning of skills, Professor Hollingworth never intended to extend such an organization to all of the child's activities, either within or outside of the school. At no time during her educational experiments did Professor Hollingworth overlook an opportunity for the Terman classes to join actively with the other classes in the school in cocurricular activities.

That Professor Hollingworth carefully weighed the criticisms leveled against special classes for the intellectually superior is shown in the following statement:<sup>12</sup>

Results indicate that special class does not produce as personality handicaps either conceit, poor health or social unadaptability, as is sometimes supposed where there has been no actual experience with special classes. The special class does solve the problem of how to provide both appropriate work and appropriate social contact with classmates.

That she was not irrevocably committed to homogeneous grouping as the best way to educate the superior child is strongly indicated in the following statement: "We stand at the very beginning of experimental work in this field and do not know yet what is our duty as educators toward these very gifted children."<sup>12</sup>

<sup>10</sup> Leta S. Hollingworth, "The Child of Very Superior Intelligence as a Special Problem in Social Adjustment," *op. cit.*, p. 156.

<sup>11</sup> Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture* (New York: Macmillan Company, 1926), p. 135.

<sup>12</sup> Leta S. Hollingworth, M. V. Cobb, and Others, "The Special Opportunity Class for Gifted Children, Public School 165, Manhattan," *Ungraded*, Vol. VIII (March, 1923), p. 128.

<sup>13</sup> Leta S. Hollingworth, "Personality Development of Special Class Children," *op. cit.*, p. 446.



## The Special Opportunity Classes at Public School 165

The first of Professor Hollingworth's educational experiments began in 1922 with the formation of two Special Opportunity classes at Public School 165. The experiment and subsequent follow-up studies of the pupils received partial support from funds supplied by the Carnegie Corporation of New York. The classes were organized on the premise that there are children with such markedly superior mental ability that no regular classroom can hope to meet their needs. In a populous metropolitan community these children occur with sufficient frequency to permit classes to be formed which will be relatively homogeneous, not only chronologically and socially but mentally as well.

After wide search, two groups of twenty-six children each were formed. Group A, with IQ's (S-B) from 150 up, and Group B with IQ's (S-B) from 134 to 154, all falling within the chronological age range between  $7\frac{1}{2}$  and  $9\frac{1}{2}$  years, and with grade placement in their former school situations between 3B and 5B. Only children who showed substantial grade acceleration were selected for the experiment. These special classes were continued for a period of three years.

The stated purposes behind the educational experiment were, "first, the particular children in it must be educated — the class exists for them, but secondly, they must be studied — our knowledge of such children must be increased, for we have, after all, very little information to guide us in differentiating their schooling." Thus, apart from providing the children with the best immediate education which the school could give, the primary emphasis was placed on studying the children "genetically, physically, psychologically, and educationally, keeping records of their development and progress physically, socially, and educationally."<sup>14</sup>

During the experiment, Professor Hollingworth delved persistently into every possible aspect of the life of the gifted child that lent itself to objective appraisal. Her careful observations and controlled studies of the children during the three-year experimental period and the years following their graduation revealed important facts concerning many phases of the educational and

<sup>14</sup> Leta S. Hollingworth, M. V. Cobb and Others, "The Special Opportunity Class for Gifted Children, Public School 165, Manhattan," *op cit*, pp. 121-128.

psychological problems of the gifted child. Her researches dealt with such topics as the musical sensitivity of intellectually superior children, comparative studies of the physical measurements, neuro-muscular capacities, and facial beauty of the gifted, the relative mental ability of gifted children and their siblings, and the permanence of the superior status of these children. As Dunlap has well stated, "When the limited extent of information about the gifted in this period is contemplated, the contributions from this brief experiment in their education become enormous."<sup>15</sup> It was the accumulation of what some might regard as isolated or fragmentary bits of knowledge that later made possible more dynamic experimental work.

It was found that even within the relatively homogeneous groups in the Public School 165 experimental classes it was necessary to adapt the curriculum to the needs and capacities of the individual child. The children needed only half the usual time to cover adequately the prescribed subjects and some of the top group needed only one-fourth of the usual time. This left them with half, or more, of the school day in which other material could be given. If the child was to stay socially adjusted to his grade and not become a greater social misfit as he went on in school, this material had to be different from the subjects prescribed for the more advanced grades. It had to be an enrichment of the usual school fare. Although activities of an enrichment nature, such as opportunity for the study of French, algebra, and history of civilization were provided, an intensive study of what curriculum differentiation would be best adapted to their needs waited for the 1936 experiment. The one introduction of a definite enrichment program in this first experiment was a class in biography taught by Professor Hollingworth herself. This class proved so successful, especially with the group testing at 150 IQ (S-B) or above, that it was continued with some adaptations in the second educational experiment.<sup>16</sup>

At the close of the three-year experiment in homogeneous

<sup>15</sup> James M. Dunlap, *A Plan of Education for the Gifted in the City of New York*. Unpublished Ed D. Dissertation, Teachers College, Columbia University, 1944, p. 87.

<sup>16</sup> Leta S. Hollingworth, "An Introduction to Biography for Young Children Who Test Above 150 IQ," *Teachers College Record*, Vol. XXVI (December, 1924), pp. 277-287.

grouping, an evaluation of progress was made by comparing the achievement, as measured by standardized achievement tests, of the pupils at Public School 165 with a control group of thirty-six children who were similar in age and intellectual capacity, but who were attending the regular grades of the elementary schools. It was found that in accomplishment in subject matter there was no appreciable difference between the segregated and non-segregated groups. In the case of intellectually superior children, accomplishment in the subject matter measured by standardized tests was very superior wherever these children were located. The authors<sup>17</sup> of the evaluation study concluded that "the advantages to be hoped for from the homogeneous grouping of gifted children lie not so much in the expectation of greater achievement in the tool subjects of reading, arithmetic, and spelling as in an enrichment of scholastic experience with additional intellectual opportunities." If the authors had had at their command equally refined and objective instruments of measurement by which the degree of personal satisfaction and social adjustment could be ascertained, the results of the evaluation might have been quite different.

### The Terman Classes at Public School 500, Speyer School

The second of Professor Hollingworth's educational experiments had its inception in 1934, when the need for the individualization of instruction was stressed by the Superintendent of Schools of New York City, Dr. Harold G. Campbell. In his annual report for 1934-35, he said:

The problem of individuation, of fitting the school to the child, is an ever present challenge to the creative thinking of contemporary educators on every level of our public school system. The implications of this problem for the elementary school designed to meet the needs of all the children of all the people<sup>18</sup> are sufficiently arresting to warrant a re-evaluation of its philosophy, objectives, administrative set up, instructional procedures, and control. The task of making the largest elementary school system in the world child-conscious<sup>19</sup> manifestly re-

<sup>17</sup> Howard A. Gray and Leta S. Hollingworth, "The Achievements of Gifted Children Enrolled and Not Enrolled in Special Opportunity Classes," *Journal of Educational Research*, Vol. XXIV (November, 1931), p. 261.

quires long range planning of a high order, intelligent supervision, and enlightening experimentation for its successful accomplishment <sup>18</sup>

To further the objectives stated above, the Board of Superintendents of New York City appointed the Committee of Eight on Individualization from the staff of the New York City educational system to study, among other things, a reduction of retardation, a formulation of standards of expectancy, a program for the discovery and development of individual talents, and a plan for individualizing curricular offerings <sup>19</sup>

At the same time, the administrators of the Advanced School of Education at Teachers College favored the founding of a laboratory where, under the supervision of professors in the Advanced School, doctoral candidates in psychology and education could work on long time studies of the development and education of exceptional children

As a result of these joint professional needs, Public School 500, Speyer School, was opened on January 28, 1936. The school had two major problems to study: first, the problem of the educational needs of the slow learner, and secondly, the problem of the intellectually gifted child who has the ability to cover the prescribed curriculum in a fraction of the time allowed and then has no task to challenge or interest him.

The plan of the school was as follows

1. The school was to run for a period of five years from the date of founding
2. The same pupils were to be kept for the full time, except for loss of pupils through unavoidable transfers
3. The school was to maintain nine classes, totaling 225 pupils, with 25 pupils to each class, and, insofar as possible, an equal number of boys and girls
4. Seven classes were to be made up of pupils testing between 75 and 90 IQ (S-B). These pupils were to be taken from the same school district as that of Public School 500 and were to be in grades from 1A to 5A at the time of selection. The classes were to be called

<sup>18</sup> Harold G. Campbell, "All the Children," *Thirty-Seventh Annual Report of the Superintendent of Schools, City of New York, 1934-35* (New York City: New York Board of Education), Quoted by Leta S. Hollingworth in her article "The Founding of Public School 500 Speyer School," *Teachers College Record*, Vol. XXXVIII (November 1936), p. 119

<sup>19</sup> *Ibid.*, p. 120

Binet classes, in deference to the contribution of Alfred Binet to backward children.

5. The two classes made up of children testing not or above 130 IQ (S-B) were to be called Terman classes in acknowledgment of the investigations of Lewis M. Terman. Pupils for the Terman classes were to be selected on the double criteria of IQ and chronological age, disregarding actual grade placement. In chronological age, the children were to be between 7 and 9 years of age, or to have been born between February, 1927, and February, 1929. Pupils in the Terman classes were to be admitted from any of the five boroughs if they could arrange to travel to the school. The children for Terman classes were to represent the many ethnic groups common in the city, and, as far as possible, the number selected from each ethnic group was to be proportional to the incidence of these groups in the city population.
6. The school was to be administered through the Assistant Superintendent in Charge of Elementary Education, Dr. Benjamin B. Greenberg, and the Assistant to the Principal, a licensed appointee of the Board of Education.
7. The regular classroom teachers also were to be licensed appointees of the Board of Education especially selected on the basis of past records.
8. Special teachers, drawn both from Teachers College and the New York City Board of Education, were to work in the school when needed.
9. The educational advisers, acting for and through the Advanced School of Teachers College, were to be Professor Leta S. Hollingworth, who would work with the Terman classes, and Professor William B. Featherstone, whose special concern would be Binet classes.<sup>20</sup>

The goal adopted by the personnel and administrators of Public School 500, Speyer School, was to cultivate the traits which are held to be desirable in every member of a democratic society irrespective of the individual level of intelligence. The function of the school was to develop each child to the fullest expression of his powers.

In short, the chief purpose in the operation of Speyer School was to solve the problem stated in the Report of the Superintendent of Schools as "the problem of individuation, of fitting the school to the child," or, as expanded by Professor Hollingworth,<sup>21</sup>

<sup>20</sup> Leta S. Hollingworth, "The Founding of Public School 500, Speyer School," *op. cit.*, pp. 119-128.

<sup>21</sup> *Ibid.*, p. 128.

"It is that of individualization of education. It is that of evolving a curriculum for exceptional children which will be psychologically possible and proper, socially sound, and ethically humanitarian. This problem relates both to children who have very little capacity for literacy and to those who have unusually great capacity."

### The Enrichment Curriculum for Rapid Learners at Public School 500, Speyer School

The first fifty pupils eventually selected for the two Terman classes at Public School 500, Speyer School, came from every borough of Greater New York. The median IQ for the group during the five-year period varied from 140 to 144 because of additions or withdrawals from the classes. Two children who possessed highly specialized abilities but whose IQ fell slightly below the minimum of 130 were admitted. The chronological age range at the time the school opened was between 7 years and 9 years 6 months, with a grade placement in the schools from which they came ranging from 1A to 6B.<sup>22</sup>

As her guiding principle in planning the curriculum for these children, Professor Hollingworth adopted the statement by Thorndike that the education of the best thinkers should be an "education for initiative and originality."<sup>23</sup> She contended that any study undertaken as "general discipline" for the minds of the rapid learners or any work which involved simply covering materials that would be required again in high school or college would be useless in achieving these objectives. "The education given," she wrote, "should be such as will function specifically and uniquely in their lives. It should afford them a rich background of ideas, in terms of which they may perceive the significant features of their own times."<sup>24</sup> Thus the objectives of the curriculum for rapid learners differed perhaps in degree, but not

<sup>22</sup> Leta S. Hollingworth, "The Founding of Public School 500, Speyer School," *op. cit.*, p. 125.

<sup>23</sup> E. L. Thorndike, "Education for Initiative and Originality," *Teachers College Record*, Vol. XVII (November, 1916), p. 405.

<sup>24</sup> Leta S. Hollingworth, "An Enrichment Curriculum for Rapid Learners at Public School 500, Speyer," *Teachers College Record*, Vol. XXXIX (January, 1938), p. 297.

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essentially in kind, from the objectives of a functioning curriculum for all children

The first specification in the curriculum, therefore, was to give an abundance of opportunity for gifted pupils to develop attitudes, understandings, appreciations, knowledges, and skills which would function in their lives as children. The second specification was to give them deeper insight into the significance of contemporary problems in order that they might become more effective citizens in a democratic society.

The curriculum at Public School 500, Speyer School, could best be described as moderately progressive in nature, since it was frankly experimental in design and yet retained much of the traditional. Half of the school day was devoted to prescribed elementary school subjects and the remaining half to enrichment activities. It was never necessary to teach reading as a separate subject since all of the rapid learners had learned to read before they entered the school. It was necessary, however, to teach spelling and arithmetical calculations. At times, such teaching resembled, if it did not actually duplicate, the drill activities of the traditional school. The greatest difference was probably in the reduction of time required for drill activities rather than in any drastic change in teaching. No attempt was made to weave the teaching of these foundation skill subjects into the themes of the enrichment units, although constant opportunity was provided through the units for their practical application.

At first, the mechanics of grammar and written expression were not taught as separate subjects, but emphasis was placed upon correctness of oral and written communication in all phases of the school program. The effectiveness of this approach was demonstrated by the scores received on the language usage section of the standardized achievement tests given at the end of each term's work. However, the first group of older students who entered secondary schools were penalized there for a lack of knowledge of the formal aspects of the mechanics of English, regardless of the excellence of their oral and written work. Therefore, syntax and grammar were introduced into the curriculum of the Terman classes.

The objectives governing the curriculum developments in the

of Education of Teachers College, was carried on for several semesters.

Special teachers from the New York City High School of Music and Art assisted with the work in these specialized areas. The art work particularly was an extensive and integral part of each of the enrichment units on "The Evolution of Common Things." Handicrafts were also a part of the curriculum. In this connection, Professor Hollingworth observed, "The handiwork of the rapid learners is very superior, contrary to the current superstition that highly intelligent children are poor with their hands."<sup>26</sup>

Dramatic activities were introduced under the direction of a member of the staff of Speyer School and were very popular with the rapid learners. Professor Hollingworth felt that a large opportunity for the development of the creative abilities of gifted pupils lay in this area. Furthermore, opportunities for the development of appreciations and skills in human relationships were provided through the cocurricular program, through activity on the playfield with pupils from the other classes in the school, through the games club, the assembly programs, and activities in the gymnasium and swimming pool.

Thus evolved the first steps in a curriculum for rapid learners, which Professor Hollingworth had envisioned as "psychologically possible and proper, socially sound, and ethically humanitarian."<sup>27</sup> The term "enrichment" was well chosen to describe this program, for it went far beyond the acquisition of isolated facts.

### Implications of the Enrichment Curriculum for the Educational Problems of Today

The war and the large influx of veterans into institutions of higher education brought about a penetrating analysis of the values inherent in the curriculum offerings on the college level. As a result, a resurgence of interest has developed in a program of general education. The Report of the Harvard Committee,<sup>28</sup> a much quoted treatise on the subject, defines general education as



"that part of a student's whole education which looks first of all to his life as a responsible human being and citizen."

President Conant<sup>29</sup> states the broad objectives for a program of general education:

The heart of the problem of a general education is the continuance of the liberal and humane tradition. Neither the mere acquisition of information nor the development of special skills and talents can give the broad basis of understanding which is essential if our civilization is to be preserved. No one wishes to disparage the importance of being "well-informed." But even a good grounding in mathematics and the physical and biological sciences, combined with an ability to read and write several foreign languages, does not provide a sufficient educational background for citizens of a free nation. For such a program lacks contact with both man's emotional experience as an individual and his practical experience as a gregarious animal. It includes little of what was once known as "the wisdom of the ages," and might nowadays be described as "our cultural pattern." It includes no history, no art, no literature, no philosophy. Unless the educational process includes *at each level of maturity* some continuing contact with those fields in which value judgments are of prime importance, it must fall far short of the ideal.

Let us compare the foregoing objectives with those set forth by Hollingworth<sup>30</sup> in discussing her enrichment program for superior children. She wrote:

It is useless to undertake extensive work in classical languages or in mathematics as "general discipline" for the minds of these rapid learners. The education given should be such as will function specifically and uniquely in their lives. It should afford them a rich background of ideas, in terms of which they may perceive the significant features of *their own times*. . . . The education of the best thinkers should be an education for initiative and originality. Effective originality depends, first of all, upon sound and exhaustive knowledge of what the course of preceding events has been. To take their unique places in civilized society, it would seem, therefore, that the intellectually gifted need especially to know what the *evolution of culture has been*. And since at eight or nine years of age, they are not as yet ready for specialization, what they need to know is the *evolution of culture as it has affected common things*.

<sup>29</sup> *Ibid.*, p. viii.

<sup>30</sup> Leta S. Hollingworth, "An Enrichment Curriculum for Rapid Learners at Public School 500, Speyer School," *op. cit.*, p. 297.

In her discussion of the selection of material for an enrichment curriculum, Professor Hollingworth<sup>21</sup> stated her belief that the level of maturity dictates, in part at least, the choice of subject matter. In this connection she wrote

One may suggest that in the elementary school the enrichment curriculum might proceed by covering the evolution of common things which are concrete — leaving for the secondary school those common things which are relatively abstract and involve especially concepts of social-economic consequence.

Other points for comparison are the arguments for ability grouping presented by both the advocates of general education and by those concerned with the education of the gifted. The Harvard Committee<sup>22</sup> in their proposal for differentiation of instruction write

It can be objected that an education which is not shared by all exactly in the same way is not a truly common education. This objection has some force since sharing of experience is certainly, within limits, an ideal of all education, notably in a democracy. Yet, if thoroughly carried out, this ideal would be disastrous. It would mean that in general education and only in general education, would the quick and the slow be thrown helter skelter together, the ones held back, the others forced beyond their speed and neither satisfied. The ideal of commonness must therefore show itself chiefly in a common requirement rather than in a common way of carrying it out. There must be courses of different difficulty and different method in each of the three spheres of general education and the criterion for membership in these should be neither a student's intention in life nor his background nor the kind of diploma for which he is aiming, but simply whether or not a given course is the best for him — which is to say a criterion of ability. Extra-curricular activities and the general atmosphere of the school, both important for general education, are perhaps the only truly identical experiences but even these will be stronger when they rest on common aims of study.

Expression of the fear that segregation of the able in school will produce class consciousness subversive to the ideals of democracy seems to imply that at present in adult society men are mingling equally and freely with persons of all degrees of intelligence, in work, neighborhood, conversation, and recreation. No such condition exists, or ever has existed in adult society. As life goes on, like minded men are winnowed into social groups, partly by the outcomes of economic competition, . . . and partly by ability to perform the same acts of thought.<sup>33</sup>

\* \* \*

The mistake here lies in assuming that merit can be made common, and that boys and girls can assimilate as much education as the authorities judge desirable. "One who has become thoroughly familiar with the researches upon which this volume is founded will realize that children will not be given as much education as authorities deem desirable, but will be given only the limited amount that each can take, even under a regime such as that proposed."<sup>34</sup>

A further similarity between Professor Hollingworth's provisions for educational enrichment for mentally superior students and the suggested program for general education is in the area of the skilled trades. The Harvard Committee Report<sup>35</sup> states

Most students who expect to go to college are now offered an almost wholly verbal type of preparatory training, while hand training and the direct manipulation of objects are mainly reserved for the professional fields. This is a serious mistake. The bookish student needs to know how to do things and make things as much as do those students who do not plan to take further intellectual training. The direct contact with materials, the manipulation of simple tools, the capacity to create by hand from a concept in the mind — all these are indispensable aspects of the education of everyone.

Expressing her idea that the gifted should be adept in manual activities, Professor Hollingworth<sup>36</sup> wrote

It is to be considered, also, that each of these pupils, at and above 150 IQ (S-B), would have the capacity to master a manual trade, in addition to mastering a profession, if time were allowed during adolescence. At thirteen years of age, the hand then being developed, such pupils might be trained for skilled trades, as an enrichment of curriculum. In a changing world it is perhaps a good thing for those who are

<sup>33</sup> Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture*, *op cit*, p. 304.

<sup>34</sup> *Ibid*, p. 362.

<sup>35</sup> *General Education in a Free Society*, p. 175.

<sup>36</sup> Leta S. Hollingworth, *Problems of Relationship Between Elementary and Secondary Schools*, *op cit*, p. 98.

capable of *both* profession and skilled manual craft to have *both* at their service as adults, and to be capable of serving society and themselves in more than one specialized vocation

There is without question a decided parallel in the thinking of present day exponents of general education and that of Hollingworth, but a divergence of opinion probably would arise over where in the educational sequence general education should be emphasized. Present day proponents stress the importance of general education at the college level and recommend that approximately half of the student's program be devoted to these general studies. One should realize that this emphasis may very well involve either diluting the college program or postponing full specialization until the postgraduate years.

The advocates of general education have stated well the values inherent in specialization. They say

We are living in an age of specialism, in which the avenue to success for the student often lies in his choice of a specialized career, whether as a chemist, or an engineer, or a doctor, or a specialist in some form of business or of manual or technical work. Each of these specialties makes an increasing demand on the time and on the interest of the student. Specialism is the means for advancement in our mobile social structure, yet we must envisage the fact that a society controlled wholly by specialists is not a wisely ordered society. We cannot, however, turn away from specialism. The problem is how to save general education and its values within a system where specialism is necessary. . . . We conclude, then, that general education has been neglected, . . . but we do not conclude that specialization should be abolished. It is of great educational importance that students be allowed to acquire something approximating a mastery of a particular segment of learning. There is no other device which provides quite the same educational values, no other which gives at least to the more serious student a comparable feeling of satisfaction in exchange for good and honest work.

Hollingworth had given much thought to this issue and Thorndike also was concerned with it. The latter emphasized its bearing upon the life course when he said, "We want them to progress rapidly to their life work, so that they can do more of it, and can afford soon to get married and produce children. . . . We do not want them to spend school days in ornamenting their

minds with strings of cultural beads or scientific diadems unless they especially enjoy doing so' <sup>38</sup> In an earlier discussion of the problem, Hollingworth expressed her disapproval of the lengthening of the period of preparation for the professions. She wrote

Difficulties of physical and social adjustment may, therefore, be cited as arguments against rapid progress through regular grades in the early school years. There are, nevertheless, weighty reasons why rapid progress through school, by some means, is very advantageous for psychological, physiological, and economic adjustments in late adolescence. A very troublesome feature of modern civilization is the constant lengthening of the period of preparation for all learned professions. So out of proportion to the life span and to organic needs has the standard of professional life evolved that it is now scarcely possible for young persons to become self-sustaining economically by means of a profession until nearly thirty years of age, if only the conventional rate of progress be maintained. <sup>39</sup>

In our planning for advanced education on the college level we are confronted with a situation in which we have first, an intense need for a broader and more vital educational background, second, a world situation necessitating a relatively high degree of specialization, and third, the psychological and socio-economic needs of the students which demand that they not unduly prolong the period of preparation before they take their places as producing members of society. Professor Hollingworth showed the way out of this impasse through a program of curriculum enrichment, or, if you will, of general education. She placed this program at a much earlier level than college, because "In the ordinary elementary school situation, children of 140 IQ waste half their time. Those above 170 IQ waste practically all of their time." <sup>40</sup> She believed in sending these mentally superior students into college already equipped with a broad general background that would allow them to embark immediately on a program leading to further professional specialization without loss of precious time.

It is readily recognized that no radical curriculum revisions

<sup>38</sup> E. L. Thorndike, "Gifted Children in Small Cities," *Teachers College Record*, Vol. XLII (February, 1941), p. 422.

<sup>39</sup> Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture*, op. cit., p. 299.

<sup>40</sup> Leta S. Hollingworth, "What We Know About the Early Selection and Training of Leaders," *Teachers College Record*, Vol. XL (April, 1939), p. 586.

can be made on either the elementary or secondary school levels unless the colleges agree to revise their academic requirements for admission. The strong advocacy of the colleges for a program of general education is the greatest stimulus for curriculum change throughout the educational structure that has occurred in many years. Actually, the colleges themselves are now advocating the same type of curriculum enrichments as those that Professor Hollingworth advocated for the elementary school.

### Children Above 180 IQ (S-B)

Professor Hollingworth recognized the necessity for longitudinal studies to determine to what extent achievement at maturity may be predicted from a high IQ in childhood. However, neither her training as a clinical psychologist nor her temperament gave her much liking for highly statistical research. Her interest was in the individual. The foregoing factors directed her attention away from studies involving a relatively large number of subjects. Therefore she did not attempt to follow in great detail the progress of all the gifted she identified. But through studies under her direction, she maintained contact for a period of fifteen years with the pupils of the Public School 165 experiment. Two follow-up studies of this group appear in the literature: first, when the students were of high school age<sup>41</sup> and again, when they approached maturity.<sup>42</sup>

Hollingworth's own intensive longitudinal studies were of children testing at the very top of the intelligence distribution, that is, with IQs (S-B) of 180 or above. The task of finding these children who, by statistical frequency, appear but once or twice in a million was far from easy. In twenty three years of searching in the densely populated metropolitan area, Hollingworth located only twelve who tested at this high level. To find even that many, literally thousands of children were tested, many of whom were referred for testing because of their mental gifts.

At the time of her death, Hollingworth was in the process of

<sup>41</sup> Edna E. Lamson, *A Study of Young Gifted Children in Senior High School*, Teachers College Contribution to Education, No. 424 (New York: Bureau of Publications, Teachers College, Columbia University, 1930).

<sup>42</sup> Leta S. Hollingworth and Ruth M. Kaunitz, "The Centile Status of Gifted Children at Maturity," *Pedagogical Seminary and Journal of Genetic Psychology*, Vol. XLV (1934), pp. 106-120.

revising her monograph on these extremely gifted persons. Thus the most significant part of the investigation, her interpretation of their adult status, is missing. This monograph was completed and published later by her husband, Dr. Harry L. Hollingworth. In his foreword to it, he states

Much is lost that would have been contributed had the author lived to complete her project. She knew these cases intimately and at first hand. Some of them she had followed for as long as twenty years, taking a personal interest in the individual children and their problems, advising them, assisting them, continuously observing them, and frequently testing and measuring them.<sup>43</sup>

Although no final conclusions were drawn on the basis of only twelve cases, some obvious facts were deduced from the investigation. Among others was the fact that while no single item could be singled out in all the cases as indicative of accelerated developmental pace, it was early talking and reading that most clearly differentiated these individuals from the average. Throughout the study, the advantages of early recognition of their unusual abilities and provision of opportunities for their fullest development were apparent. These children presented difficult problems of educational adaptation from the time of their entrance to school. All showed superior capacity for learning but their actual accomplishments, as well as the degree of their personal and social adjustment, depended to a large extent on the methods which those in authority used in developing them. Creative abilities were far more conspicuous in children at this level of intelligence than in the general population, but here again the expression of their creativity could be stifled by unwise treatment. It can be confidently predicted that those who test at or above 180 IQ (S-B) in childhood will be the students who will win top academic honors in college. Unfortunately their accomplishments as adults cannot be predicted with the same degree of confidence. Whether the failure of one or two persons in the Hollingworth study to reach the adult status of success indicated in youth was due to personality handicaps inherent in the individual himself or to the inept development of these gifts by those in authority was not determined. Although in all of her writings

<sup>43</sup> Leta S. Hollingworth, *Children Above 180 IQ* (Yonkers-on Hudson, New York: World Book Company, 1942). Edited by Harry L. Hollingworth.

Professor Hollingworth inclined toward the second reason as the more likely one, the question remains to be answered through future research.

Another important outgrowth of the study of these individuals possessing a rare degree of superior mental ability was the re-definition of the term *genius*. Heretofore Terman, and following him many others, had used the term to describe children testing at or above 140 IQ (S-B). The findings of Hollingworth and a co-worker<sup>44</sup> showed that those who tested at about 140 IQ (S-B) represented approximately the upper one-fourth of college students the country over. Certainly, the term *genius* should not be applied to them. It appeared that "mildly noteworthy achievements" such as winning honors in a first-class college call for an IQ (S-B) of at least 160. The authors concluded that "the children who test at and above 180 IQ (S-B) constitute the 'top' among college graduates. They are the students of whom one may confidently predict that they will win honors and prizes for intellectual work. . . . Perhaps this is the point at which the term *genius* begins to apply."<sup>45</sup> Later when informally speaking to a group, Professor Hollingworth expressed her conviction that the term *genius* was a definite misnomer for a child or youth. She believed that it should be reserved to describe individuals who have already made original contributions of outstanding and lasting worth. She would describe those who test at 180 IQ (S-B) and above and who are still in their developmental period as *potential geniuses*. She held that time must elapse to prove whether they possess the industry, perseverance, initiative, and originality necessary to earn for them the accolade of *genius*.

### Adjustment of the Gifted

Professor Hollingworth devoted much attention to the personality and social adjustment problems of the gifted child and to the unhealthy procedures frequently adopted in trying to solve them. She recognized that gifted children, placed in the "lock-step system" of the usual school and in other daily routines of

<sup>44</sup> Leta S. Hollingworth and Irving Lorge, "Adult Status of Highly Intelligent Children," *Pedagogical Seminary and Journal of Genetic Psychology*, Vol. XLIX (September, 1939), pp. 215-228.

<sup>45</sup> *Ibid.*, p. 226.



life, face certain recurring difficulties which children of average intelligence do not encounter so acutely. She recognized also that the farther removed the child is from the average in intelligence the more pressing his adjustment problems become. "By trial-and-error experience," she says, "the highly intelligent child has to work out an adjustment, if he can, but there is likely to be noticeable difficulty if he tests above 170 IQ."<sup>46</sup>

In general, Professor Hollingworth was concerned with the whole area of the gifted child's personal adjustment to life, that is, to the habitual behavior patterns he is likely to adopt in satisfying his needs, whether in meeting the demands of conformity or in reacting to the frustrations that are sure to arise from failing to meet these demands. In this connection she made two significant statements:

Because he learns everything very quickly, the highly intelligent child is especially quick to discover what forms of conduct on his part bring him satisfactions. If tantrum is rewarded, bright children may display even bigger and better tantrums. On the other hand, the very intelligent learn readily to refrain from undesirable behavior that is followed quickly and inevitably by punishment.

To hold his tongue, to listen quietly and respectfully to others, to speak according to some order of procedure, and to restrain disappointment at failure to be heard at all—these habits seem especially difficult for gifted children to form. It is hard for them to maintain silence when ideas press for utterance. Only gradually do these children learn self government in this respect.<sup>47</sup>

As a part of the larger problem of adjustment to life, Professor Hollingworth was concerned with several specific problems. The first of them was the forming of desirable work habits. She said, in effect, that where the gifted child drifts in the school unrecognized, held to the lock step determined by the capacities of the average, he has little to do. He receives daily practice in habits of idleness and daydreaming. His abilities are never genuinely challenged, and the situation encourages in him expectations of an effortless existence.<sup>48</sup> In her judgment, "Children up to about 140 IQ tolerate the ordinary school routine fairly well, being

<sup>46</sup> Leta S. Hollingworth, "The Child of Very Superior Intelligence as a Special Problem in Social Adjustment," *op cit*, p. 154.

<sup>47</sup> *Ibid*, p. 156.

<sup>48</sup> Leta S. Hollingworth, *Children Above 180 IQ*, *op cit* p. 270.

usually a little young for grade through an extra promotion or two, and achieve excellent marks without serious effort. But above this status, children become increasingly bored with school work, if kept in or nearly in the lock step." Also, "Children at or above 180 IQ, for instance, are likely to regard school with indifference, or with positive distaste, for they find nothing interesting to do there."<sup>49</sup> Professor Hollingworth records that during the experimental stage of their education, the highly intelligent tend to avoid routine drudgery in favor of more stimulating and original projects. "The sheer drudgery involved in learning the multiplication table, for example, is likely to be waived in order to follow some absorbing story or experiment, unless conformity is urged from without."<sup>50</sup>

A second specific problem in the area of social adjustment of gifted children, Professor Hollingworth recognized, is the lack of congenial companionship with children of their own age. She realized that the friendships of any person are determined by his degree of intelligence and that congeniality between persons depends to a large extent upon their ability to think of the same things. Hence, since there are so few children at the top levels of intelligence, that is, in the upper 1 per cent of the child population, it is very difficult for such children to find congenial friends. This factor of infrequency, however, creates a serious problem only at the very extreme degrees of intelligence, it is partially offset by the fact that neighborhoods and schools tend to be selective, since like-minded children are likely to be located in the same districts. In a residential suburb, for example, there will be more children who test high on mental tests than there will be in the general population.

Speaking of the lack of congenial friends among children at the extremes of intelligence, Professor Hollingworth recorded that of six young children testing above 180 IQ (S-B) and known to her personally, only one had no conspicuous difficulty in play during early childhood. This one child attended a school where a number of the pupils tested above 140 IQ (S-B). She stated that such children are unpopular with children of their own age because they always want "to organize the play into complicated

<sup>49</sup> Leta S. Hollingworth, *Children Above 180 IQ*, op cit., p. 270.

<sup>50</sup> *Ibid.*, p. 278.

patterns with some remote and definite climax as the goal”<sup>51</sup> Children testing above 180 IQ like to play and have more “play knowledge” than the average child. Outdoor sports are popular with them but they also enjoy more complicated and competitive games than children generally do, age for age. Their vocabulary often contains words that the average child does not know, at play, therefore, the gifted and the average child literally cannot understand each other. Hollingworth wrote, “It is futile and probably wholly unsound psychologically to strive to interest the child above 170 IQ in ring-around-the-rosy or blindman’s buff. Many well-meaning persons speak of such efforts as ‘socializing the child,’ but it is probably not in this way that the very gifted can be socialized.”<sup>52</sup>

A third adjustment problem cited by Professor Hollingworth is the precocious concern of the very gifted child with matters of origins and of destiny and with the problem of evil in the abstract. Though the gifted child dwells on these problems, he is unable to gain help in their solution because of his youth. ‘The higher the IQ,’ wrote Professor Hollingworth, “the earlier does the pressing need for an explanation of the universe occur, the sooner the demand for a concept of the origin and destiny of the self appears.”<sup>53</sup> The intellectual needs are those of an adolescent, but the emotional controls and physical powers are still those of a child. ‘Lifelong problems of mental hygiene may be thus engendered by parents who cannot understand why a child is ‘so unnatural’ as to weep over questions of birth and death at six or seven years of age.’<sup>54</sup>

In all her writing on the adjustment problems of the gifted, Professor Hollingworth emphasized that many of these problems were primarily functions of immaturity. She thought that any child in whom the mental age of an adult and the emotions of a child are combined in a childish body is certain to encounter difficulties. She pointed out that after babyhood the younger the child, the greater the difficulties. She wrote

Adjustment becomes easier with every additional year of age. The years between four and nine are probably the most likely to be beset with the problems mentioned. By the time a gifted person is phys

<sup>51</sup> *Ibid.*, p. 274

<sup>52</sup> *Ibid.*, p. 272

<sup>53</sup> *Ibid.*, p. 280

<sup>54</sup> *Ibid.*, p. 281

ically mature, many of the problems herein outlined automatically disappear as problems. What aftereffects there may be of the poor solutions of these childish problems we do not know. Apparently, these superior organisms tolerate well the strains put upon them by reason of their deviation from the average; however, that an organism stands strain well is no reason for putting or leaving strain unnecessarily upon it.<sup>25</sup>

Certain symptoms or effects of maladjustment in the gifted child, which may appear later as a handicap in the gifted adult, may be readily recognized, according to Professor Hollingworth. One of these is his negative suggestibility, a condition which grows out of his struggle for adjustment against dull and unworthy adults during childhood. She observed that while the gifted are not likely to fall victims to positive suggestibility, many of them develop negativism to a conspicuous degree.

This condition of negative suggestibility, produced in the gifted child or adolescent who perceives the illogical conduct of those in charge of his affairs, may result in rebellion against all authority and inability to take a cooperative attitude toward authority. In Professor Hollingworth's words, "Thus some gifted persons, mishandled in youth, become contentious, aggressive, and stubborn to an extent which renders them difficult and disagreeable in all human relationships involving subordination. Since subordination must precede posts of command in the ordinary course of life, this is an unfortunate trend in personality. Cynicism and negativism are likely to interfere seriously with a life career." Happily, gifted children are typically endowed with a keen sense of humor, and in a majority of cases are apparently able to mature beyond cynicism.

The attitude of cynicism, together with the lack of congenial friends noted earlier, often combines to produce another scar on adult years. This is the tendency to become isolated. Thence solitude may become a fixed habit and may help to explain the shyness and lack of gregariousness of many intellectual adults who suffer from feelings of inferiority in social situations. These adults not only fail to develop their abilities and therefore their opportunities fully, but often they also experience unhappiness and undue anxiety and insecurity.

<sup>25</sup> Leta S. Hollingworth, *Children Above 180 IQ*, op. cit., p. 282.

## The Conservation and Development of Gifted Children

Another matter of concern to Professor Hollingworth was the lack of provision for gifted children who did not have the means with which to pursue their education. Time and again she approached foundations and other philanthropic agencies with proposals for setting up scholarship funds for such individuals. She repeatedly met with resistance at the idea of providing any special opportunities for superior children although she found that philanthropic agencies always gave large sums of money for the care of the dependents of society. She discovered the typical attitude of the successful businessman to be that "bright children should take care of themselves." In vain she pointed out, "It would be an impossibly strong and shrewd child who could today conduct his own education, under the child-labor laws — all in the first eighteen years of his life."<sup>56</sup>

The hostility toward any special consideration for the needs of the gifted was as widespread among influential American educators as it was among laymen. During the course of her work she learned, "It is often a disservice to a gifted child to mention in recommendations the child's IQ. It is better to mention some concomitant characteristic, such as that the child is a persistent student, or that he is ambitious to succeed. These are qualities which presumably anybody might cultivate or acquire at will."<sup>57</sup>

A copy of a memorandum to the American Council on Education relating to scholarship aid for the gifted was found among Professor Hollingworth's papers after her death.<sup>58</sup> It was not dated but it probably was written in 1938. This memorandum of Professor Hollingworth's is now of timely significance. In December, 1949, the American Council on Education, the agency to which she had sent her memorandum of 1938-39, called a conference for the purpose of seeking agreement on the basic issues involved in the proposed legislation to provide a Federal program of scholarships and fellowships.<sup>59</sup> The conference was at-

<sup>56</sup> Leta S. Hollingworth, "What We Know About the Early Selection and Training of Leaders" *op cit*, p. 590.

<sup>57</sup> Leta S. Hollingworth, "How Should Gifted Children Be Educated?" *op cit*, p. 197.

<sup>58</sup> Leta S. Hollingworth, "The Conservation and Development of Gifted Children," *Public Addresses* (Lancaster, Pennsylvania: The Science Press, 1940).

<sup>59</sup> American Council on Education, *Higher Education and National Affairs*, Bulletin 148 (December 20, 1949).

tended by delegates from twenty educational organizations, as well as by representatives of appropriate governmental agencies. The proposed legislation was presented to the conference in the form of a tentative draft of a bill drawn up by the United States Office of Education.

The similarities, as well as the dissimilarities, between certain of the actions taken at this conference and Professor Hollingworth's memorandum, as well as her other writings on the same topic, give insight into her pioneer vision. It also may be a commentary on the educational lag that exists between the advice given by leaders and the time needed for putting this advice into actual practice.

The delegates to the 1949 conference unanimously agreed "That there is enough evidence to demonstrate that there is need for a Federal program of scholarships and fellowships." In her memorandum of 1938 or 1939, Professor Hollingworth said, "One cannot do better than to quote from Terman's statements of nearly twenty years ago in describing the situation of gifted children in America: 'Through the handicapping influences of poverty, social neglect, physical defect, or educational maladjustments, many potential leaders in science, art, government, and industry are denied the opportunity of a normal development.'"<sup>80</sup>

The conference further agreed "That there is also sufficient evidence to demonstrate that a program based solely on loans to students will not meet the need. It is preferable that the legislation make no reference to loans, and under no consideration should loans and scholarships be presented in legislation as alternate methods of providing financial assistance."<sup>81</sup> Professor Hollingworth's feeling on this matter was that the recipients of such help should have responsibility for repayment in kind for the help given them. In this connection she wrote: "What is needed for the support and development of these children . . . is what we may call a revolving foundation. By this is meant a fund from which the gifted young could draw, at any age, the means for their development, with the moral (not legal) obligation to repay

<sup>80</sup> Leta S. Hollingworth, "The Conservation and Development of Gifted Children," *op. cit.*

<sup>81</sup> American Council on Education, *Higher Education and National Affairs*, *op. cit.*

according to ability to do so, after twenty years, without interest."<sup>62</sup>

The recent conference also agreed "That the phraseology in the proposed bill is satisfactory; i.e., providing for a national examination to measure *general ability to do work on the higher educational level* but with discretion left to the State Scholarship Board subject to the approval of the State Plan by the Commissioner of Education. Persons qualifying on the basis of ability shall receive an honorary designation as the recipient of a Meritorious Award." Throughout her writings Professor Hollingworth herself emphasized the importance of psychological tests. In her pleas for the establishment of a revolving fund for the development of gifted children she invariably specified that they were to be *tested* children.

The 1949 conference went on to agree "That the bill should require the establishment of a State Scholarship Commission in each State." In her memorandum to the American Council on Education in 1938 or 1939, Professor Hollingworth stated her opinion that "the machinery for allocating and distributing the suggested funds could be readily set up, if the Council were willing, within the organization of the American Council on Education; or could be created *de novo*, if the function were uncongenial to the Council."

The conference voted "That the bill be introduced through administrative channels of government upon the opening of the second session of the 81st Congress in January, 1950." One can only surmise that Professor Hollingworth would have heartily approved and that she would have repeated the request made in her memorandum for funds to be expended . . . "for the identification of gifted children among the pupils in American elementary schools."

### Problems for the Future

Since Professor Hollingworth's death in 1939, a second World War has been fought, a social upheaval that temporarily cen-

<sup>62</sup> Leta S. Hollingworth, "What We Know About the Early Selection and Training of Leaders," *op. cit.*

tered psychological attention upon those in military service and away from experimentation on the lower school levels. The psychological services used during the war for the selection and classification of personnel for the Armed Forces, together with the psychological guidance offered to returning veterans, have established more firmly than ever the value of psychological testing and counseling in guiding the young adult. Differentiation in academic, professional, or technical education, depending upon the individual's level of ability and aptitude, has been accepted by the general public. Probably one reason is the recognition by the veteran and his family that through this method of objective selection he has been offered greater equality of opportunity for educational advantages than ever before existed in the history of the world. The acceptance of differentiation has occurred at the level of higher education, either in the college or technical school. Since educational changes frequently permeate down through the educational structures, such devices and procedures may be generally adopted, first in the secondary and finally in the elementary school.

In order to hasten the spread of the ideal of differentiation and individualization of instruction, educators must cease expending their energies on the controversial issues of nature versus nurture, homogeneous versus heterogeneous grouping and constancy versus fluctuation in IQ. However challenging these issues may be, the most urgent problem now is to reach a common area of agreement around which a vital and unified plan of education can be evolved for the times in which we are now living. Upon the invaluable knowledge contributed by the pioneers in differential psychology and education a new educational structure must be built.

The first step in reaching the common ground of understanding is probably the matter of definition. How shall we define what shall be meant by the term *gifted child*? Although Professor Hollingworth directed her educational experiments to children with IQ's in the upper 1 per cent of the population, she had a much broader concept of giftedness than this would imply. She once wrote

By a gifted child we mean one who is far more educable than the generality of children are. This greater educability may lie along the



lines of one of the arts, as in music or drawing; it may lie in the sphere of mechanical aptitude; or it may consist in surpassing power to achieve literacy and abstract knowledge. It is the business of educators to consider all forms of giftedness in pupils in reference to how unusual individuals may be trained for their own welfare and that of society at large.<sup>63</sup>

If educators can agree that the time has come when the definition of the gifted must be enlarged to include a much broader group than merely those who test at the top of our present mental scales, the next step will be to re-evaluate our instruments for measuring unusual abilities. Although the past and continuing usefulness of the present mental scales is recognized, there is a growing awareness of their limitations and an increasing sense of the need to develop new instruments of measurement which will explore more and more facets of ability. Witty has clearly pointed out the limitations in scope of the present mental scales:

If by gifted children we mean those youngsters who give promise of creativity of a high order, it is doubtful if the typical intelligence test is suitable for use in identifying them. For creativity posits originality, and originality implies successful management, control, and organization of new materials or experiences. Intelligence tests contain overlearned materials. . . . The content of the intelligence is patently lacking in situations which disclose originality or creativity.<sup>64</sup>

It has long been the habit in aesthetics and other creative areas to dismiss the possibility of developing objective instruments of measurement with the statement that creative ability is both too complex and too subjective to permit the successful development of objective instruments of prediction. Now that the need to identify and educate potential creative leaders toward their greatest social usefulness has become more crucial than ever before, this *laissez-faire* attitude cannot be tolerated any longer. Those who have potentialities for originality and "the ability to manage, control, and organize new materials and experiences" <sup>65</sup> must be given the opportunity to develop their powers. Since "that which exists can be measured," it is the urgent duty of educators and psychologists to redouble their efforts toward developing new and better instruments for measuring creative aptitudes.

<sup>63</sup> Leta S. Hollingworth, "How Should Gifted Children Be Educated?" *op. cit.*, p. 195.

<sup>64</sup> Paul A. Witty, "Contributions to the IQ Controversy from the Study of Superior Deviates," *School and Society*, Vol. LI (April 20, 1940), p. 504.

<sup>65</sup> *Ibid.*

It should go without saying that the greatest need existing today is to find those who can lead in establishing the bases and means of wise living with our fellow men. It is of utmost importance to discover at an early age patterns of behavior which will predict unusual strength in the positive factors of emotional maturity, perseverance, social insight, and drive to accomplish. We need to discover those who excel in these attributes of "social intelligence" early in childhood in order that their unique gifts may be developed to the highest potential. To this end, all workers with the young should direct their efforts. As a first step, those who work in the clinical field, and particularly the experts in the use of projective techniques, should turn from preoccupation with the diagnosis of pathological deviations in behavior to the diagnosis of deviations that are socially desirable.

Both Terman and Hollingworth have repeatedly emphasized the importance of discovering potential leaders early in their lives. Both of these pioneers believed that part of the reason for the lack of adult achievement by some of those known to be gifted grew directly out of the fact that their potentialities had not been discovered early enough in life. The later work of Carmichael,<sup>66</sup> Gesell,<sup>67</sup> and others lends support to the theory that personality patterns possess a degree of permanency at an earlier age than was believed possible even a decade ago. The contributions of these scientists also indicate that the total pattern of the potentialities can change if the environmental climate is changed early enough in life. Terman and Oden have stated that "we have not learned how to bring the highest intellectual gifts to normal fruition or how to steer them clear of the dangers that threaten personality development in extreme superdeviates."<sup>68</sup> "We can hardly fail to agree that education needs to redouble its efforts in this direction.

If a solid basis of agreement can be reached on the need for ex-

<sup>66</sup> Leonard Carmichael, "The Onset and Early Development of Behavior," *Manual of Child Psychology*, edited by Leonard Carmichael (New York: John Wiley and Sons, Inc., 1946), pp. 43-166.

<sup>67</sup> Arnold Gesell, "The Ontogenesis of Infant Behavior," *Manual of Child Psychology*, edited by Leonard Carmichael (New York: John Wiley and Sons, Inc., 1946), pp. 295-311.

<sup>68</sup> Lewis M. Terman and Melita H. Oden, "Correlates of Adult Achievement in the California Gifted Group," *Thirty-Ninth Yearbook of the National Society for the Study of Education, Part I. Intelligence: Its Nature and Nurture* (Bloomington, Illinois: Public School Publishing Company, 1940), pp. 83-84.

panding our definition and for early identification, there is still a third pressing need to be considered. Experiences of the last decade have demonstrated that we must revise our ideas about where the gifted may be found. Recorded data, as well as casual observation, show that many veterans who became outstanding college students came from environmental situations where, without veteran benefits, further educational advantages would have been out of the question. Witty<sup>69</sup> has pointed out that in the over-emphasizing of the verbal factor in our present mental scales for the younger age-group, we may have overlooked many children in low-income areas who possess great potentialities. He has shown that there are likely to be more gifted children, if not proportionately, at least in absolute numbers, in nonprofessional families and in families in the average and lower income brackets than educators up to now have suspected — certainly more than our present instruments of measurement have detected. If instruments of measurement that are less dependent upon the verbal factor can be developed, they may lead to the discovery of a much higher proportion of gifted children than was previously believed to exist in the lower socio economic and minority racial groups.

The needs of our culture place a high premium on the individual who possesses unusual ability to think in terms of spatial relationships, of issues requiring human understanding, and of *the successful management of materials*. Since these very talents are often found and developed among members of minority groups, probably because of certain pressures inherent in their need for survival, it may well be that greater numbers of gifted individuals will be found in such groups.

## Conclusions

Professor Hollingworth was interested in the optimum development of the gifted child. She constantly reiterated that he must be discovered and nurtured in his early youth in order to avoid the pain and frustration of crippling maladjustment in a society which so often regards him as an 'oddity'. She was concerned with what would constitute a 'proper' education for his superior

<sup>69</sup> Paul A. Witty *op cit*, p. 506

talents and enable him to fulfill his potentialities. But she did not stop there. As a social scientist, a clinical psychologist, and an educator, Professor Hollingworth realized that "the few children who test at the very top of the juvenile population have a unique value for society." She must have had deep misgivings over the implications of Terman and Oden's conclusions following their first follow-up study. Their data showed that "for subjects brought up under present day educational regimes, excess in IQ above 140 or 150 adds little to one's achievement in the early adult years," and that "above the IQ level of 140, adult success is largely determined by such factors as social adjustment, emotional stability, and drive to accomplish."<sup>10</sup>

More, perhaps, than any other worker in this field, either past or present, Professor Hollingworth was aware of the loss to society which results from the inept handling of superior children. She believed that the clumsy mismanagement and the lack of understanding and appreciation on the part of parents, teachers, and early guardians of these rare children make the Terman-Oden statements true, and not the inherent character or personality of the children themselves. She realized that for the sake of society and the welfare of the world, these children of superior gifts must be identified and developed into leaders for society.

In one of her last public addresses, Professor Hollingworth said "The times cry out for leaders to guide the people safely in a world where, without vision, more people will perish in more different ways than have ever perished before."<sup>11</sup> Today there is almost universal acceptance of the urgent need to locate the leaders who will "guide the people safely," and without whose guidance not only individuals but civilization itself may perish — perish in ways which scientists in their laboratories were only beginning to perceive as possibilities when Professor Hollingworth spoke.

On another occasion, Professor Hollingworth wrote, again as a social prophet: "The change of the times is irresistible, inevitable. The one thing that can be said safely of any situation or condition in human affairs is that it will not stay the same. Times will

change, not by our puny efforts at reform, nor in the direction we try for, but in *unforeseen* directions by the observations of forces that are far from obvious."<sup>72</sup>

A little more than a quarter of a century ago Professor Hollingworth established her first experimental classes offering special provisions for the education of the gifted. Her influence on educational thought and practice has become more and more apparent. The two original classes with which she began, in all likelihood the first to have curriculum enrichment rather than accelerated progress as the aim, have now grown to fifty-six intellectually gifted classes in the public schools of Greater New York. Where there were fifty at first, there are now considerably more than one thousand elementary school children of superior mental caliber receiving the benefits of an individualized program of education. Moreover, there is evidence of a growing interest in the identification and development of the gifted throughout the country. In fact, the conservation of our gifted youth now has become a matter of national concern.

Professor Hollingworth left us a body of facts concerning the gifted child which is as sound today as the day she recorded them. Her observations revealed unusual insight and will continue to supply many an hypothesis and to furnish challenge and inspiration to other workers in the field. Professor Hollingworth did much to dispel the popular idea that a gifted child is a physical weakling, an oddity in personal appearance, or an eccentric in personality. She showed that the gifted are usually superior in physique and physical stamina, are more pleasing in appearance than the average, are more stable emotionally, and have a low rate of juvenile misbehavior or delinquency.

We must cultivate the field which Leta Hollingworth plowed. We must formulate new procedures for identifying, understanding, and educating the gifted child. We must expand our definition, devise new instruments of measurement, and change our ideas of where the gifted may be found. Thus, we shall be ready to put into effect a dynamic program for the "proper" education of the gifted.

<sup>72</sup> Leta S. Hollingworth, *How to Keep from Becoming an Old Fogey*, "Public Addresses" (Lancaster, Pennsylvania: The Science Press, 1940), p. 63.

## Chapter Five

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### SOME OBSERVATIONS OF HIGHLY GIFTED CHILDREN

#### Examples of Highly Gifted Children

The files of New York University's Counseling Center for Gifted Children include more than 6,000 cases. Among them is that of a boy named Boyd. He was eight years ten months of age when his mother came to the Center to discuss the adequacy of Boyd's school. The initial interview revealed the following facts.

Boyd had recently won first prize in an essay contest open to elementary school children of metropolitan New York. The title of his essay had been "The Meaning of the Life of Theodore Roosevelt in the Development of the American Idea." Boyd had a library of more than one hundred books, largely science, history, and biography. After consultation with the town librarian, he had indexed them according to the Dewey decimal system.

In the basement of his home he had a physics laboratory and a machine shop. A large part of his time was spent in contriving and conducting experiments. He had written a book, *The A B C's of Electricity*, which he had presented to the school library. He had applied, through his father, for a patent on a new process for capping oil wells (it was not to his discredit that an engineer had been granted a patent on the same principle shortly before).

Boyd's father was a famous scientist, and fellow scientists were

frequent visitors in the home. It was Boyd's delight to engage his father's distinguished guests in dinner table discussions of the influence of religion on the development of civilization. Boyd, in the fifth grade of a suburban school system, was completely bored with what went on in the classroom. Since the boy had already skipped two grades, the principal believed that further acceleration would be undesirable. The teacher, the mother, and the counselor worked patiently to meet this boy's needs and to prevent the waste of his unusual ability.

The records of the Counseling Center for Gifted Children contain the stories of many other such children: a girl who, at two and a half, was composing tunes to her nursery rhymes and, at six, had composed a suite to the stories of the *Arabian Nights* containing passages comparable to the original beauty of the first symphony of seven-year-old Mozart, a nine-year-old who spent two hours drawing a cross section of the intersection of Broadway and Forty-second Street from the pavement down, showing its intricate arrangement of subway tubes, water mains, steam and electrical conduits, sewers, gas mains, and the like to document his statement that New York City could grow no larger.

Such children we have found consistently to test at 170 IQ or above, Boyd tested over 200 IQ. The Counseling Center for Gifted Children has had contact with more than one hundred children with intelligence quotients of 170 or above. These are the children whom, for the purposes of this discussion, we are designating as 'highly gifted'.<sup>1</sup> What sort of children are they?

<sup>1</sup> In a paper prepared by Leta S. Hollingworth and Irving Lorge, *Adult Status of Highly Intelligent Children*, *Pedagogical Seminary and Journal of Genetic Psychology* Vol. XLIX (September 1936) pp. 215-226, the authors concluded as the result of a restudy of a group of gifted children grown to maturity: "Perhaps this is the point at which the term genius begins to apply, i.e., at or near IQ 180 if we adhere to the dictionary definition of the word: Exalted intellectual power, marked by an extraordinary faculty for original creation, expression, or achievement (Funk and Wagnalls)." Catherine M. Cox and others in *Genetic Studies of Genius* (Vol. II: *The Early Mental Traits of Three Hundred Geniuses*, (Stanford University, California: Stanford University Press, 1926), attempted to estimate the IQs men of genius might have achieved by comparing their rates of development (as revealed in biographical materials) with those of groups of contemporary children achieving various levels of IQ. This tour de force admittedly not conclusive nonetheless suggests that children testing at 170 IQ and above have ample creative intellectual capacity to achieve genius if the other factors that condition the high level of creativity and productivity which history judges to be genius operate in their favor. The fact that Terman compared his data on children testing at and above 170 IQ with those of his gifted group as a whole would indicate that he is of the same opinion.

What are their futures likely to be? Opinions differ among psychologists and educators, as well as among people at large.

A four year-old boy once wandered into a bookstall, looked over the shelves, and took down a book. The proprietor laughed indulgently and said, "Little man, if you can read that book I'll give it to you." The boy gravely opened the book and began to read aloud. Finishing a page, he tucked the book under his arm and walked out. When the bookseller recovered from his astonishment, he shook his head and remarked, "Another prodigy!"

### Some Misconceptions Regarding the Highly Gifted

Highly gifted children are likely to be regarded, at best, with tolerance, at worst, as unnatural phenomena to be ignored. Cartoonists caricature them with nearsighted eyes peering through thick lensed spectacles, bulging foreheads, flat chests, spindly arms and legs. These children are pictured also in ludicrous social perplexity. The *New Yorker* has presented us with numerous examples. There is a strong implication that gifted individuals are emotionally unstable.

The Sunday magazines predict dire futures for them, backing up their predictions with such stories as that of an eleven-year-old who lectured on the fourth dimension to the mathematics faculty of a great university, but in later years was engaged in collecting streetcar transfers and in doing hand computations for a statistical research organization, the story of a ten year-old novelist who is now punching a cash register, or the story of a twelve year-old composer whose debut at Carnegie Hall opened the door to a career as trombonist in a small town dance band.

A well known industrialist, in discussing his son's school deficiencies with one of the Center's psychiatrists, remarked "I know the boy is no genius — but thank God, he's not wacky!" His opinion and feeling are shared by many educators.



Leta Stetter Hollingworth believed that this attitude toward the highly gifted was the reflection of widespread resentment of the more able by the less able. America prides itself, and rightly so, on its tradition of equalitarianism. But equalitarianism is likely to lead to the denial of individual differences, particularly extreme ones. Individuals whose creativeness places them far above the rank of the average individual are likely to be resented.

The roots of this attitude, however, lie deeper in the history of philosophy and psychology. Since 450 years before Christ, there has been speculation as to the relationship between genius and instability. Socrates, Democritus, Plato, Aristotle, and Seneca let their minds play with the idea. With the birth of psychiatry, science turned its attention to this question. Moreau de Tours, in 1859, wrote the first psychiatric treatise on the problem. Lombroso made it a celebrated theme of controversy throughout the scientific world.

Lange-Eichbaum, in *The Problem of Genius*, devotes many pages to the attempt to document this hypothetical relationship. Of the seventy-eight greatest geniuses, he believed that 37 per cent showed evidence of at least one psychotic episode, that an additional 46 per cent displayed markedly psychopathic personalities, and that another 10 per cent were mildly psychopathic in personality, leaving only 7 per cent who were clearly normal. It is an easy step from acceptance of the belief that highly gifted adults are unstable to the *non sequitur* that highly gifted children also must be.<sup>2</sup>

A little biographical research on those among our contemporaries who are outstandingly creative and productive, however, leads to serious question as to the validity of this attitude toward highly gifted children. Young Farnsworth, as a high school student, conceived the principles underlying modern television. James Hillier, inventor of the electron microscope, tore down the new telescope his father had bought him to build his first microscope out of the parts. Orson Welles—a literary and dramatic success at twenty-six—as a small child listened absorbed at his mother's knee as she read aloud from Shakespeare; his first toy was a puppet theater; his first book, *A Midsummer Night's Dream*.

<sup>2</sup> Wilhelm Lange-Eichbaum, *The Problem of Genius*, translated by Eden and Cedar Paul (New York: Macmillan Company, 1932).

Looking back over the childhood of great men and women of the past, we find that many of them were prodigies also John Stuart Mill reading Greek at four, Charles Dickens writing a tragedy at seven, Isaac Newton spending his childhood building working models of water clocks, windmills, and other more intricate machines, Goethe, at six, so much a philosopher that when he heard a sermon on the Lisbon earthquake as an apparent contradiction of Providence, he commented "After all, it is probably much simpler than they suppose, for God knows the immortal soul can suffer no harm through such a fate"

Whatever the reasons for it, there has obviously been widespread misunderstanding of the nature of gifted children. It is time we reexamined our thinking

### Increasing Appreciation of the Highly Gifted

Increasingly educators are asking, Are not the highly gifted children of today the potential innovators and creators of tomorrow? Are they not perhaps the greatest of our resources, to be conserved and developed in the interest of their future contributions to the progress and welfare of society? Is not one of the critical problems of a democracy that of learning how to utilize more effectively its highly gifted citizens in the interest of achieving its goals?

There has been too little research on the development of the personalities of the highly gifted to answer completely these questions Boardman, Elwood, Jenkins, Jones Witty, Zorbaugh, and others have stated their opinions.<sup>2</sup> But these opinions have been based on observation of single children, or at most a handful of children, and the data have been fragmentary

<sup>2</sup> M. I. Elwood "Descriptive Study of a Gifted Child," *Pittsburgh Schools* Vol. XII, pp. 162-73.

Martin D. Jenkins, "Case Studies of Negro Children of Binet IQ 160 and Above," *Journal of Negro Education* Vol. VII (Spring Number 1943) pp. 159-66.

Alce M. Jones "The Superior Child," *Psychological Clinic*, Vol. XV (March-April 1923) pp. 1-8.

Paul Witty "Exploitation of the Child of High Intelligence Quotient" *Education and Method* Vol. XV (March, 1936) pp. 295-304.

Harry W. Zorbaugh "Is Instinct Inherent in Giftedness and Talent?" *Proceedings of the Third Conference on Education and the Exceptional Child of the Child Research Council* (Lancaster, Pennsylvania: The Woods Schools, 1937).

Harry W. Zorbaugh and Fhea L. Boardman "Salvaging Our Gifted Children," *Journal of Educational Sociology* Vol. X (October, 1936), pp. 100-108.

## Generalizations Concerning the Highly Gifted

### *The Studies of Hollingworth*

A majority of the generalizations which are possible concerning highly gifted children we owe to the interest and research of Leta S. Hollingworth and Lewis M. Terman. In *Gifted Children: Their Nature and Nurture*, Hollingworth, in 1926, made a few tentative generalizations concerning the differences between gifted children as a whole, and the highly gifted children she had observed.<sup>4</sup> In *Children Above 180 IQ*, published posthumously in 1942, she reported on thirty-one such children. Unfortunately, her work was incomplete at the time of her death and her colleagues pieced together many of the cases from fragmentary notes. Other observations on the highly gifted appeared in scattered papers that she published between these two works. Her generalizations, consequently, are not so systematic and soundly based as those of Terman. But because of her rare insight and feeling, her conclusions deserve serious consideration.

In summary, Leta Hollingworth characterized the origins and development of the highly gifted children she had studied as follows:

Origin is extremely varied as regards racial stock. In describing the 14 American children, German descent is mentioned 3 times, French 3, Scottish 5, English 5, Swedish 1, Scotch Irish 1, Dutch 1, Jewish 1, Negro 1.

The occupational status of the fathers all fall in Class 1 or Class 2 of Taussig's rating—professional, clerical, or business proprietors. Social economic status wherever mentioned is said to be moderate. None is stated to be very wealthy or very poor.

Age of parents at birth of the exceptional child covers a wide range.

Development is decidedly ahead of schedule for the group in all respects. Reported age of walking (7 cases stated) ranges from 7 to 14 months. Talking in sentences, in the 10 cases in which it is given, ranges from 6 months to 19 months. In 13 cases the age of reading is assigned, this being always 3.5 or 4 years.

General health is, whenever mentioned, always reported as good and except for twins, born prematurely, physique is superior.<sup>5</sup>

<sup>4</sup> Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture* (New York: Macmillan Company, 1926).

<sup>5</sup> Leta S. Hollingworth, *Children Above 180 IQ* (Yonkers-on Hudson: New York World Book Company, 1942), pp. 61-62.

She was impressed with these children's early interest in questions of origin and destiny and concluded such interest and questions are conspicuous indications of unusual giftedness.

Although these questions rise vaguely and intermittently in the minds of children in general, they do not begin to require logically coherent answers until about the mental age of twelve or thirteen years. Then they begin to press for more or less systematic accounts. From these circumstances of mental development, the erroneous idea has long been promulgated, even by psychologists, that *puberty* in some mysterious manner leads to the rise of religious needs and convictions. Since among the generality a "mental age" of thirteen years is, roughly, coincident with the age of pubescence, the two developments have been assumed to be casually [sic] related.

When we observe young gifted children, we discover that religious ideas and needs originate in them *whenever they develop to a mental level* past "twelve years mental age." Thus they show these needs when they are but eight or nine years old, or earlier. The higher the IQ the earlier does the pressing need for an explanation of the universe occur, the sooner does a demand for a concept of the origin and destiny of the self appear.

In the cases of children who test above 180 IQ observed by the present writer, definite demand for a systematic philosophy of life and death developed when they were but six or seven years old.<sup>6</sup>

She was also impressed with the early intensity of their feeling about moral issues of their society.

Problems of right and wrong become troublesome for these young children in a way that does not happen except for the very able. For instance, a six-year old boy of IQ 187 wept bitterly after reading "how the North taxed the South after the Civil War." The problem of evil in the abstract thus comes to trouble these children almost in their cradles, at an age when they are ill-suited to grapple with it from the point of view of emotional maturity.<sup>7</sup>

Regarding their adjustment to their contemporaries, she comments:

The majority of children testing above 160 IQ play little with other children unless special conditions are provided, such as those found in a special class. The difficulties are too great, in the ordinary course of events, in finding playmates who are appropriate in size and congenial in mentality.<sup>8</sup>

<sup>6</sup> *Ibid.*, pp. 279-280.

<sup>7</sup> *Ibid.*, p. 281.

<sup>8</sup> *Ibid.*, p. 282.

ceived slightly higher marks than the gifted group as a whole, though not in proportion to their excess in IQ. They were farther accelerated, all but two from one to six years. They graduated from high school at a younger age, the boys by 96 months, the girls by 8 months, they were younger when they received their college degrees, the boys by 96 months, the girls by 12 months.<sup>20</sup> Nearly twice as high a proportion of them achieved an "A" average in college, though 25 per cent of them had college records that were but fair or poor.<sup>21</sup>

Terman recognized that these highly gifted children had acute problems of social adjustment.

It is in the case of the child with extraordinarily high IQ that the social problem is most acute. If the IQ is 180 the intellectual level at six is almost on a par with that of the average eleven year old, and at ten or eleven is not far from that of the average high school graduate. Physical development, on the other hand, is not likely to be accelerated more than 10 per cent, and social development probably not more than 20 or 30 per cent. The inevitable result is that the child of 180 IQ has one of the most difficult jobs of social adjustment that any human being is ever called upon to meet.<sup>22</sup>

The distribution curve of intelligence implies that a child of 140 or 150 IQ may find a fairly large group of associates whose mental development and range of interests are not hopelessly far behind his own, and who react to him as a congenial playfellow. The child of 170 or 180 IQ, on the other hand, stands in an extremely sparsely populated region of intelligence. Only one child in thousands makes so high a score. If he is promoted to a school grade in which the intelligence level of the pupils is at all commensurate with his own, he is likely to be so immature in size, strength, and social-emotional development that there is small chance for him to become a functioning member of the miniature social cosmos in which he finds himself.<sup>23</sup>

On 25 of the cases sufficiently detailed information was available to permit ratings of social adjustment. The subjects were rated on a five-point scale: a rating of one indicated marked sociability and leadership, five indicated serious maladjustment or almost complete lack of social intercourse. The ratings were distributed as follows:

\* *Ibid.*, pp. 253-254.

<sup>21</sup> *Ibid.*, p. 295.

<sup>22</sup> Barbara S. Burke, Martha W. Jensen, and Lewis M. Terman, *Genetic Studies of Genius*, Vol. III, *The Promise of Youth* (Stanford University, California: Stanford University Press, 1930), p. 173.

<sup>23</sup> *Ibid.*, pp. 264-265.

remarkably consistent with those of Hollingworth when it is borne in mind that the groups studied were small, and that one was studied on the Pacific Coast while the other was investigated on the Eastern Seaboard. Both, of course, were predominantly urban.

Terman and Hollingworth are in agreement that highly gifted children spring from family stocks of a variety of racial and national origins, but of predominantly upper-middle-class status, with a strong occupational trend in the direction of managerial and executive positions, independent proprietorship, and the professions.<sup>29</sup> They agree that highly gifted children have histories of accelerated development, particularly in the ages at which they learned to talk and read.<sup>30</sup> They report health as good and physique as superior, though not appreciably more so than for gifted children as a whole. Both have emphasized, however, the discrepancy or disharmony likely to occur among their rates of physical, emotional, social, and intellectual development.

Both Terman and Hollingworth recognize that highly gifted children face difficult problems of group adjustment, due to the small number of children of their ages of equal mental maturity and their own discrepancies in development, which are likely to make for solitariness and isolation from their contemporaries. Both recognize that while on the average they have superior school records, they are likely to encounter little challenge to their interests and abilities, to find school boring if not frustrating. Both recognize that the schools' tendency to accelerate them makes more acute the problems of adjusting to contemporaries.

Terman and Hollingworth further agree that a majority of these children show a high degree of originality and creativity. Hollingworth stresses as an indication of their creativity, their early interest in questions of origin, destiny, and morality. She notes, however, that their need to grapple with such questions while socially and emotionally immature, unless understandingly met, may be a source of anxiety.

The data of both Terman and Hollingworth reflect the emotional cost of the adjustive problems faced by highly gifted chil-

<sup>29</sup> Hollingworth's children are of somewhat more diverse origin than Terman's, which perhaps may be accounted for by the facts on migration and class stratification within the American population.

<sup>30</sup> Terman, however, notes little difference in developmental rates of "highly gifted" and "gifted" children save in age of learning to read.

dren, and its depressing influence upon their productivity. While as a group they are highly creative, Hollingworth notes that a third of those she studied showed "no indication of marked constructive originality." Terman observes that while they have as a group superior college records, the records of 25 per cent are but fair or poor. It is Hollingworth's judgment that the chances of genuine group leadership among the highly gifted are slight. Terman found them likely to be in the ruck of the groups in which they were studied. While, in young adult life, they average superior social-economic status, a large proportion have failed to fulfill the promise of their childhoods.

We have termed these facts evidence of the emotional cost of their adjustive stresses. The data of both Terman and Hollingworth reveal the family stocks from which highly gifted children spring to be of average if not of slightly superior stability. There is no evidence of a disproportionate instability in the children's own early histories. Indeed, Terman is of the opinion highly gifted children show little more maladjustment than do gifted children as a whole. Hollingworth, however, believed that children of intelligence much above the optimum (IQ 125-155) are exposed to unusual hazards in their personal development.

*Studies from the Files of the Counseling Center for  
Gifted Children, New York University*

Our own observations strikingly confirm those of Terman and Hollingworth. The highly gifted children coming to a counseling center admittedly are not representative of such children as a whole. But for this very reason their histories highlight many of the problems of adjustment recognized in the research literature and reveal others.

The average age of referral to the Counseling Center for Gifted Children being under five years, we have had the opportunity to follow the development of many of these children from early childhood. During their early years we have found them, as a group, to function emotionally with no more stress than do young children in general, to be normally outgoing in their interests, creative, and productive. This picture changes, however, during the middle years and adolescence.

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dences of maintaining their high level of function at increasing emotional cost. Some show a diminution of social interest, creativity, and productivity. Still others, like the third of the children reported by Hollingworth, show no indication of marked constructive originality. A few remain remarkable only in that they continue to achieve high scores on intelligence tests. Exploration of these children's feelings about themselves convinces us such changes, in the children in whom they occur, reflect an increasing absorption of emotional energies within themselves, which in turn result from an increasingly stressful social adjustment.

We have had the opportunity to achieve a deeper insight into the emotional dynamics of the families from which highly gifted children come than had Terman or Hollingworth. These families, predominantly upper middle class, exhibit all the drives for advancement of their social status and for competitive success that Warner has found characteristic of the upper middle class as a whole.<sup>21</sup> Of superior intelligence, they hold high standards for themselves, and high expectations for their children. At the same time, they reveal more awareness of the disparity between what life might be and what it is, more frustration in themselves, and more apprehension for their children.

This becomes doubly significant when related to the fact that these children are likely to have an unusual emotional value for their parents. The emotional temperature of American family life as a whole is unusually high; that is, within our culture, personalities seek and expect more of emotional satisfaction in family relationships — husband of wife, wife of husband, parents of children, and children of parents — than in the majority of cultures. This is particularly true within upper-middle-class families. When we consider that highly gifted children tend to come from exceedingly small families the implications of this fact become obvious.

An additional observation on the role that the mothers of highly gifted children frequently play in this family picture is pertinent. They are, in general, women of superior intelligence and unusual drive. They are members of a generation of women for whom innumerable conflicts and frustrations have been created by the

<sup>21</sup> W. Lloyd Warner, Marjorie Meeker, and Kenneth Eells, *Social Class in America* (Chicago: Science Research Associates, Inc., 1949).

rapidly changing role of women in our culture. These conflicts and frustrations present greater problems to these mothers because of their intelligence, superior education, ambition, and drive.

Many of them show more or less rejection of the traditional feminine role. This rejection is likely to complicate relationships with their children, contributing to two problems that repeat themselves: the mother's rejection to some degree of the child with the familiar aftermath of guilt, anxiety, and overprotection, and the attempt by the mother to compensate for personal frustration by identifying her own life too closely with that of the gifted child.

Such a family pattern may, of course, be part of the developmental experience of a child of any intellectual level. But we are convinced it is encountered more frequently and in more exaggerated form among the families of highly gifted children. Repeatedly we have seen it result in a conflict between the family's expectation of conformity to high standards of achievement, and the family's overprotection, which denies the child the freedom to learn to meet life adequately for himself.

Highly gifted children react to such family experiences in a variety of ways. Some react with a compulsion to succeed, but with diminished capacity for deriving emotional satisfaction from success.<sup>22</sup> Others respond with a doubt of self that evidences of their superiority do not allay. Too many show an anxiety that inhibits their risking failure. Perhaps most typical is a combination which causes the child to function at an increasing emotional cost, more and more of his emotional energy is absorbed in his inner problems, thus diminishing his social interest, productivity, and creativity.

Turning to our observation of their educational experiences, we would heavily underscore Terman's and Hollingworth's conclusion that highly gifted children are likely to present difficult problems from the time they enter school. Typically we have found highly gifted children working far below their potential capacity.

At best, the result is flagging of interest and restiveness. Too

<sup>22</sup> For example, the child who, tested at two-year intervals, achieved intelligence quotients of 179, 180, 185, and 176 while consistently surpassing 200 in his achievement quotients, but who broke down and wept when confronted with minor problems in his social relationships.

frequently it is frustration and resentment, resentment that may be returned by contemporaries and teachers. Characteristically these children are markedly accelerated, too often to the point where, grouped with children among whom they are out of their depth socially and emotionally, they feel insecure and inadequate, if not rejected. Reflecting that going to school is the child's first experience with the relationships of the wider community and society, we are of the opinion such school experiences are likely to diminish not only his creativity and productivity, but also his social interest. His ultimate social role may be thus conditioned by attitudes formed in early school life.

We have been further impressed, as were Terman and Hollingworth, with the difficulty in finding congenial contemporaries for highly gifted children because of the discrepancies between their rates of physical, emotional, social, and intellectual development. Gifted children encounter these difficulties early. We have observed such children in nursery school. After having been accepted with the group, they attempt to alter the group's activities. An analysis shows that the changes they propose are in the direction of more complex patterns with more remote goals. Although these new goals afford the gifted children greater enjoyment in their pursuit and greater satisfaction in their attainment, the rest of the group lose interest and drift away. Repeating this attempt at reorganization of activities, the highly gifted child finds himself marginal, if not isolated.

It is not surprising, then, that in the typical elementary school we find, as did Terman and Hollingworth, that highly gifted children have little chance of achieving group leadership. Indeed, Leona Kerstetter's sociometric studies reveal that even when in special classes and schools for gifted children, the highly gifted are more likely to be followers than leaders, tending to rank in the middle in terms of acceptances and rejections.<sup>22</sup>

In high school we continue to find highly gifted children having difficulty in finding congenial contemporaries. In a study within one of New York's larger secondary schools we found its highly gifted pupils to be well below average in their participation in the extracurricular life of the school. On the other hand, many more of them were attempting to relate themselves to adult

<sup>22</sup> Research in progress at the Counseling Center for Gifted Children.

groups and activities in the community. But these attempts were rarely successful. In terms of their own emotional and social maturity, as well as in terms of adult attitudes toward them, the majority of these gifted youth were still adolescent.

Furthermore, the highly gifted child's developmental disharmonies are likely to create stresses within his personality, for instance between his intellectual conception of performance and his physical ability to realize it. A preschool child whose development we followed was being taught by his father to skate. He asked for and was given a hook on figure skating. The next time he was on the ice he attempted to execute a figure eight. Having failed repeatedly, he took off his skates in frustration and attempted to execute a figure eight crawling about the ice while holding his skates in his hands.

Again, conflict may be created within the highly gifted child's personality by the discrepancy between his intellectual and his emotional maturity. As Hollingworth noted, highly gifted children, from an early age through adolescence into maturity, are concerned over the meaning of the world and their destiny in it. Such concerns may prove exceedingly stressful in view of the child's relative immaturity emotionally — may create active anxiety where family and school fail to provide the child the supporting security of warm and understanding relationships.

As the adolescent's world expands, he seeks increasingly for security within widening relationships, he feels the need of orienting his life in accord with social values which will give him satisfaction. But our culture is exceedingly heterogeneous, characterized by innumerable inconsistencies and conflicts among values, standards, conceptions of behavior, and ways of life. The need to work through and resolve these inconsistencies and conflicts is one of the major sources of adolescent stress in America.

The higher the adolescent's intelligence the more insistent is this need. At the same time, the higher the intelligence the more difficult the problem. This fact is clearly revealed in the poem on page 104 written by a highly gifted adolescent.<sup>24</sup>

<sup>24</sup> Hughes Mearns, *Creative Youth* (New York: Doubleday, Page, and Company, 1925), pp. 230-231. Quoted by Zorbaugh in "How May the Community Utilize Its Gifted Children?" *Mental Hygiene*, Vol. XXIV (January, 1940), p. 9.

*Beyond*

What is more awful than a door?  
Doors are opaque, one cannot see through them.  
One can only hear, and imagine — and dread.

"Come," you say, "it is not so bad as that!"

But put your eye to the keyhole  
All you see is pressed in the mold of the keyhole,  
Its shape leads you astray.

"I see perfectly, plainly,  
I see the leg of a chair, and a little  
Pool of light there must be a lamp above"

What color is the lamp? Crimson? . . . You do not know!  
What is in that shadow?  
What is it the shadow of . . . You cannot see!  
The side of the keyhole obscures!

"But," you say, "one can listen."

Come closer Place your ear hard against the painted wood,  
Press your ear until it becomes warm, and listen  
"Yes, I believe it to be true," a gruff voice says  
"It's a hell" says another.  
That's all you hear,  
They always contradict each other on that side of the door!

Let me tell you something you and I  
Who have never been there,  
Know more about that room than its inhabitants,  
They are not sure of anything, but we know  
That there is the leg of a chair with a lamp above,  
And that they contradict each other

Highly gifted children find this need unusually insistent and difficult to meet. More significantly, they become aware of it at an early age, when their gropings for solutions appear precocious to adults, find neither interest nor response among their contemporaries, and are exceedingly stressful because of their own emotional immaturity. In this struggle we witness the peculiar spiritual travail of highly gifted adolescents. School and community afford them little understanding and emotional support. Too frequently they fail to achieve any fundamental security

within the values of their culture, and feel aliens among their fellows. As a result, their energies may be increasingly absorbed in their inner conflicts, increasingly diverted to the pursuit of compensatory sources of security.

We find that highly gifted children as a group fail to fulfill the extraordinary promise of their early years. It is our belief this failure is due not to inherent instability, but to the emotional cost of the acute problems of adjustment they characteristically face in the course of their development.

We find no evidence in support of the often repeated assertion that stresses within the personality are a source of creative drive. Frustrations and anxieties may have much to do with the way in which the personality utilizes its creativeness, may color the nature of its production. But the more the personality's energy is absorbed in its conflicts, internal and external, the less it is free to flow outward in creative productivity, as study of the neuroses has demonstrated.<sup>35</sup>

We have, happily, witnessed notable exceptions to these generalizations — children now young men and women who are richly fulfilling their earlier promise. At the same time they emphasize the diminished creativity, productivity, and social interest of the group as a whole, and their failure fully to integrate their lives with the main stream of the community's living.

To be sure, many more of these children, as highly gifted adults, will make superior life adjustments and contribute much to the life and culture of their community. But the discrepancy between their earlier promise and their ultimate fulfillment will be great. The resultant loss to their society will be tremendous and tragic. The problem of learning effectively to use its highly gifted citizens is a critical problem of democracy.

<sup>35</sup> Were there validity in the contention that creative drive springs from conflict within the personality, there is little likelihood of those highly gifted who come through into adult life as stable and adjusted personalities feeling so at peace with the world that their creative fires are dampened. Their adjustment is on a different level of a different quality than that characteristic of persons we commonly think of as adjusted. These children are vastly more sensitive to and reactive to the experiences of living than are children in general. Their minds are more active in organizing their experiences into an inner reconstruction of reality. Their reconstructions of reality are more personal, less cultural. Their adjustments are more largely to the demands of this personal reality. From this fact springs much of their creativeness. From this fact must spring, as well, a certain sense of conflict with their environing culture.

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## THE TEACHER OF GIFTED CHILDREN

Next to the parent, the teacher exerts the most important personal influence on the development of gifted children. What kind of person should this teacher be? What procedures should he use in teaching a special class of gifted children or in teaching the gifted in a group varying widely in ability? What preparation should he have for this work? What in-service education would help him to improve the quality of his work with gifted children? These are the questions to be considered in this chapter.

### The Kind of Teachers Gifted Children Want

It is obvious that the effective teacher is, in general, the kind of person gifted children like and want as their teacher. Witty<sup>1</sup> has made the most recent intensive study of the characteristics of effective teachers. He pointed out that in 1845 the ideal teacher was described as one "who possessed knowledge of his own subject, of kindred subjects, and of the world." Throughout the nineteenth century certain traits of character of the successful teacher were stressed: "a benevolent disposition, good health, pleasing appear-

<sup>1</sup> Paul Witty, "Some Characteristics of the Effective Teacher," *Educational Administration and Supervision*, Vol. XXXVI (April, 1950), pp. 193-208.

ance, and a genuine and earnest sympathy for the young" In the twentieth century, correlation studies failed to show a close relation between successful teaching and separate factors such as intelligence, achievement in special subjects, and amount of formal education None of the separate measures for identifying the effective teacher "has proved to have marked predictive value" Subjective evaluations by the pupils themselves often give more insight into the characteristics of effective teachers

Excerpts from Witty's article give an excellent picture of the personality and behavior of teachers who have been considered helpful by thousands of children In the first Quiz Kids radio program contest on "The Teacher Who Has Helped Me Most," fourteen thousand letters were submitted by pupils in grades one to twelve The analysis of the letters showed the following traits mentioned, in order of frequency

- 1 Cooperative, democratic attitude
- 2 Kindliness and consideration for the individual
- 3 Patience
- 4 Wide interests
- 5 Pleasing personal appearance and manner
- 6 Fairness and impartiality
- 7 Sense of humor
- 8 Good disposition and consistent behavior
- 9 Interest in pupils' problems
- 10 Flexibility
- 11 Use of recognition and praise
- 12 Unusual proficiency in teaching a particular subject (This was mentioned most frequently by high school pupils)

These traits were cited consistently in the three additional annual contests that have been held and evoked a still larger response The order of the traits listed above varied somewhat from year to year A few quotations from these compositions will make the characteristics of effective teachers, as children see them, still more concrete.

A young child wrote "Just being with her the first day gave me a happy and contented feeling I did not feel strange at all, but at home Being with her makes me want to do all I can for her and everyone else, and myself, too"



Another wrote: "She is a teacher that makes a fellow want to get up early and go to school and not play sick. If a fellow has a teacher like that, he can stand on his own feet."

One child described his teacher as "using other books than textbooks, and taking us on trips." Another said: "When teaching, she brings in outside ideas and helps us to apply what we learn in our everyday lives."

The following comments were made by pupils from the primary through the intermediate grades: "She is kind and courteous, and she smiles so much that I want to please her." "She is always dressed neatly and attractively and she sets an example for us." "She never looks nor acts sleepy. There is a vitality about her that transfers to us."

One child testified gratefully: "She treats us all the same. She likes every one of us. You can tell it not by what she says but by what she does."

That children appreciate a sense of humor is indicated in the following comments:

"She puts some fun into each day so school does not seem so monotonous." "She laughs with us . . . and says a day is lost without a joke."

Many of the children commented on the teacher's good disposition and consistent behavior:

"She is always the same." "She has a smiling face, a kind manner, and a pleasing voice." "I'm sure she must have a temper, as most people do, but I have never seen an example of it."

A number of pupils told of their appreciation of help in overcoming physical defects or difficulties. Thus, a nine-year-old child, whose tendency to stutter had been a source of embarrassment, wrote this about his teacher: "I shall never forget her because she has helped me over a period of self-consciousness, and my improvement is due to her making me feel at ease."

The following comment expresses a characteristic welcomed by mature gifted children of any age:

"He let us find out about many things. He helped us but we helped him too. That's why I like science."

Another told of the encouragement all the pupils received: "School was just school until the fourth grade, but now it is so interesting I don't want to miss a day. You would have to know Miss X to get what I mean. You just want to do your best for her, because she is so good to all of us. She praises you when you deserve it."

A middle grade child stated "The teacher who has helped me most is Miss X. She taught me how to get along better with all kinds of people. I have met and liked make-believe people in my books and real people in my life."

Another pupil presented his teacher in this way. "When I first entered the eighth grade, I had a dislike for science and could never digest it at all nor understand it. When Miss X started teaching it to me, I liked the way she did it. It wasn't just memorizing stuff without knowing what it meant. She made me remember certain fine points and gave me a better understanding of it all."

In general, "the teacher most admired is usually a well-adjusted individual who is genuinely responsive in human relations."

The negative characteristics, which cropped out in such statements, as "I like Miss X because she does *not* yell at you," were essentially the reverse of the favorable characteristics already listed and illustrated. Several quotations will suffice to give an idea of the negative type of comment:

"She doesn't yell, holler, scream, shout, get angry, mad, furious, fly off the handle, pound the desk, fuss, fly in a rage, hate your head off."

"She doesn't talk too much." "She doesn't talk all the time." "She listens patiently to your ideas, and talks just the right amount."

"She doesn't talk to us like children." "She doesn't use big words, but she does treat us with respect as if she thinks our ideas are important."

"She doesn't pretend to know everything."

Witty's composite picture would well fit the effective teacher of gifted children. It may be, however, that the successful teacher of mentally retarded or average children is not always as effective with gifted children. The following quotations from a few children of high intelligence will serve to emphasize specifically some of the characteristics desirable in teachers of gifted children.

One emphasized friendliness. "Generally if a teacher comes 'down to earth' and acts as a friend, the pupil will meet him more than half way. A friendly chat with a teacher sometimes does a great deal more than punishment or criticism."

Others pointed out that teachers and parents should give children responsibility, since they often resist adult domination during early adolescent years.

"We want to be put on our own. If children are on their honor to do things that are right, they will try harder. Children do not wish to be made to do things, but they will do the same things if they have suggested the ideas themselves."

"My parents and teachers can help me best by letting me alone and not being overly critical. If I am left alone, I do much more and show more willingness to work with others. If a teacher says something I don't like to me in particular, I get mad. I know one teacher who is very sarcastic. She is forever looking for a laugh at someone's expense."

Two other pupils felt that teachers should accentuate the positive. One expressed it in this way:

"My teacher has faith in all her students and that helps them to get along better."

The other said:

"A teacher should tell each pupil what his good points are."

Still others expressed a desire for teachers who understood them:

"Parents and teachers can help you most by trying to understand you and find a cause for the difficulties you have, not by shutting you up and closing their minds to emotional or other difficulties. My parents have brought me up so that I can choose the proper path myself. Sometimes they talk over certain situations with me and remind me of or suggest a better thing to do. Teachers should be like that."

"I think my parents and teachers can help me by being understanding, just as I try to cooperate and do what's best for others as well as for myself."

Two letters from highly gifted children, one in the second grade and one in high school, describe ideal teachers whom they have known. The first was written about a first grade teacher in Connecticut:

*Remember me? I wrote to you last year. I am seven years old. I am in second grade.*

*I want to tell you about the teacher who helped me most. She was my teacher last year. Her name is Miss X. She teaches first grade.*

*I loved first grade. We learned so much. We learned to read and write and do interesting things. Like caring for fish and watching turtles. Planting funny seeds and watching them grow. We took walks and watched the seasons change. We listened to the sound of the wind and smelled the flowers and leaves. It was a happy year. It was really not like school. It was like living in a make-believe land.*

Each morning when we came to school Miss X would be at the door and say hello to us. If we had a new dress or new shoes she always knew. She said they were pretty. When you did your work she never hurried you. She always smiled and whispered, "You're doing good." I think she loved us.

She taught us to speak distinctly and listen carefully. She made us think. I remember this from last year. She said we should always be kind, and good and truthful. If we kids do this our country will be good.

All the kids want to be in Miss X's room. Her room is pretty and all the kids love school in that room. They don't want to stay home ever. My little sister wanted to be in her room. She did not get her. She almost cried. Then she got brave and did not cry. When I grow big I want to be a teacher like Miss X. I hope I grow up fast.

Goodbye  
Your friend,

JANE

The second letter was written by a high school girl about her English teacher.

My first grade teacher was motherly, my fifth grade teacher had a marvelous sense of humor, my tenth grade English teacher had a divine imaginative way of telling things, these three have left me with a lasting impression, and for a while I thought that no teacher could surpass them in these qualities. Then one day last October as I sat in my Creative Writing class, listening to and watching my teacher, I realized that she, Miss Y, had all these qualities and more, plus the ability to develop every bit of innate talent which I never suspected was there or which I was too lazy to cultivate by myself. I noticed that in other students as well, she had awakened the determination to make the best of every bit of information she had given us—information not only concerning classwork but toward equipping us to meet life properly.

It is a common occurrence to find Miss Y at her desk, long into the winter dusk, giving advice to the boy whose foster parents could no longer care for him, to the girl with boy friend trouble, and to me on all major and minor problems, everything from how to read editorials to how to gain weight. Often there are things which one finds hard even to confide to one's parents, and when questions like this arise I know that this teacher has probably erased the same worry from the minds of many others, thus making it comparatively easy for the two of us to "hash out" the difficulty.

Miss Y realizes and constantly reminds those of us who are seniors that now, in our last year, we should live our remaining high school

days to the fullest degree. She has helped me work my way to the top of the masthead on our school publications, she has aided me greatly in my highest ambition next to writing, that of radio speaking, by allowing me to write and present some of my work over the school public address system. And most of all she has given me a completely new outlook on life, for never have I seen a person so perfect of mind and spirit as she.

Miss Y has the power to gain inspiration and growth from every small experience, rising above each situation with the finest mental and spiritual attitude. She has taught me, in her own words, "to be inspired every time the flag flutters," and I find one who is so easily inspired has a much easier job when it comes to living a healthy, noble, and clean life. I would like to follow in her footsteps, to teach — not merely a high school subject, but to teach others to use their minds and bodies as God's tools, to lift up those who need lifting, and to urge on word those who need urging.

After a hard school day there is nothing more resting than to sit in her room, listening to her talk in her soft, literary manner. She has a gift of putting people's minds at ease while making them think at the same time. No one in any of her classes has ever been embarrassed or bored.

For years she has been taking hundreds of students under her wing as their teacher, helper, and counselor, not only taking time, but making time to see that each of her pupils comes to know her and to know himself. Therefore, for "best teacher" my nomination and the choice of the many who have shared my experience is Miss Y, who has the patience of Job, the wisdom of Solomon, and the kindness, strength, unselfishness, and sympathy unqualified in any other. Our world of tomorrow would surely be safe if all of today's youth had the fortune of being in such competent hands.

Friendliness, a constructive attitude toward people, eagerness to understand, knowledge of the subject or sources of information regarding it, and genuine respect for each individual and faith in his own resources and desire for self realization are desirable characteristics of all good teachers. In order to keep pace with their active minds and wide interests, the teacher of gifted children needs to be more nimble mentally and somewhat more widely read than the teacher of average children. Certainly he needs to appreciate fully their ability to take initiative and responsibility. He should also be aware of any limitations in the physical, social, or emotional aspects of their development.

Like other teachers, the person working with the gifted needs to understand human growth and development, with special ref-

erence to childhood and youth. He should be able to perceive the potentialities inherent in all kinds of personalities. Accepting the principle that "behavior is caused," the teacher should be confident that every gifted child can be helped through education to realize his most acceptable self.

### **The Teacher in Action in Class**

The education of gifted children requires gifted teachers who have the ability to recognize giftedness, to create an atmosphere and environment favorable to its development, to provide conditions that give it a chance to emerge and blossom.

### *Early Recognition and Development of Special Ability*

The teacher who understands child development and methods of child study is able early to recognize talent or other forms of giftedness in individual children. By working understandingly and sympathetically with each child as an individual and as a member of the group, the teacher can help him to develop to the optimum his intellectual ability as well as his special talent in art, music, science, or other fields.

At every educational level gifted teachers have always discovered and fostered talent. The late J. McKeen Cattell noted that a large proportion of eminent scientists came from certain colleges and universities where research workers and teachers recognized and developed talent. For example, Clark University produced more than its share of eminent men during the days when G. Stanley Hall was teaching there and discovering in his students qualities that might otherwise have remained dormant. In our own times Hughes Mearns developed remarkable poetic ability in his pupils at the Lincoln School of Teachers College. In many modern elementary schools children are producing paintings that show unmistakable talent — because their teachers have known how to discover and encourage creative abilities.

Children's creativeness in painting, for example, seems to be higher in earlier years than later. The gifted teacher gives the necessary instruction in techniques without suppressing originality and initiative. He is careful not to discourage children by critical comments, by comparing their work unfavorably with that of

others, or by maintaining inappropriate or inflexible standards of performance. This appreciative attitude helps to prevent children's art work from becoming formalized, as it so often does after they are ten or eleven years of age.

### *A Laboratory for Learning*

The teacher with vision makes use of the rich variety of human and physical resources available in any environment — rural, small town, or urban. As a result, the classroom becomes a laboratory of learning. Rural children, for example, may make their own museum, using local resources. A one-room rural school prepared exhibits on the history of lighting in their locality, from pine knots, tallow candles, and kerosene lamps, to the most modern electrical systems.<sup>2</sup> A result of this project was better lighting for their own school as well as for schools of neighboring districts.

One high school algebra teacher of scholastically superior children conducted his class in the following way. He allotted the first ten or fifteen minutes to individual study of the assignment and to answering questions. He made it clear that it was the students' responsibility to get the help they needed. Sometimes several pupils worked cooperatively on a problem. The teacher next spent as much time as necessary explaining a new topic and in analyzing the ways of solving a given problem. He was ready to discuss topics not directly related to the specific assignment — for example, the application of algebra to everyday life, or ways of handling situations in which correct reasoning makes a big difference. He tried to eliminate prejudice and to decrease tension in the class. When he discovered pupils of high ability, he helped them make plans for going to college. Near the end of the term he asked the students to write anonymously what they thought of the class and how it could be improved. The following comment well represents the general attitude of the class:

I have definitely learned more this year than the year before and I have also enjoyed discussing in class subjects besides algebra. It might seem that my algebra would be hurt by using some class periods to discuss a topic so very far away from math. But in the final analysis

<sup>2</sup> Elise H. Martens, *Curriculum Adjustments for Gifted Children*, United States Office of Education Bulletin 1946 No. 1 (Washington, D.C.: United States Government Printing Office, 1946).

thus has really helped me, since I have thought and given some serious attention to my studies in connection with my future. I have certainly gained more from this class than any other. But I do feel that you don't quite realize that no matter how hard a student tries, he can't possibly do as well as some other students. I might be wrong, but in your opinion anyone can be a huge success if he only tries.

### *Class Discussion*

More than average skill is required in leading a discussion with a group of gifted children. Each has much to contribute and often all want to speak at once. The role of the leader is to teach them the principles and procedures of effective discussion, i.e., (1) having a clearly stated goal, (2) making and evaluating suggestions for reaching the goal or solving the problem, (3) listening to others' suggestions and incorporating them into one's own thinking, and (4) building on what others have said rather than going off on a tangent or making destructive criticism. As the ball of discussion is tossed from one member of the group to another, each contributes something to the group thinking. With pupils inexperienced in discussion, the teacher may at first spend as much as one fourth of the period pointing up good features in the discussion and suggesting ways of improving it. Occasionally, he will summarize the progress made. The teacher will talk less and less as the group becomes more competent in thinking together. He can improve the group process by appointing and training a student to serve as observer and to report his observations at the end of the period. His report should be constructive and directed toward improving the quality of the interaction in the group.

Reports on outside reading are a form of discussion that gifted children usually enjoy. One seventh grade teacher, Dr. Mary Wollner, some years ago, handled such a discussion in the following manner:

Jane was chairman of the group. The teacher began by asking the pupils to review the criteria for good reports:

ANNE: They should be clear.

TOM: They should be interesting.

HELEN: Don't drag it out and keep your head up.

CHARLES: Pronounce the words correctly.



TEACHER. What is the difference between enunciation and pronunciation?

Charles answers correctly. The attention of the group is at a high level except for one boy, Frank, who thumps his hands restlessly on the desk.

JANE, the chairman, rises composedly and gives her report. I read *The Three Sisters*. It is written for girls, but the boys would enjoy it as well. Their father wanted them to have an American education, then come back and help China. (The girls are attentive. Frank, Joe, and Oscar are attentive, but the rest of the boys are not.) The family of one of the girls opposed her marriage to Sun Yat sen because he was a revolutionary. . . . China is divided into revolutionary people and the others.

ALICE compliments Jane on her talk.

JANE. But I looked down at my desk too much.

JOE reports on the movie, "*Destination Tokyo*." Probably all of the boys have seen it, but it is such a good film that I would recommend it to the girls. Even the girls would enjoy it. It has good photography, and a good story . . . good actors. One of the men is always talking about his girls . . . he makes up all these stories. (Joe recites the entire sequence of events in a piercing and monotonous tone, using rhetorical questions.) He concludes: They were landed on Tokyo beach for their mission. Were they successful? For the answer to this and other questions, see *Destination Tokyo*.

ALICE. What gave Joe the impression that the girls wouldn't like it?

FRANK. It is just another war picture, a propaganda picture made in the studio. It is just fiction, only partly the truth. Its only purpose is to infuriate kids like us. (Protests from the group.)

HELEN. Frank, do you have proof that is true, or is that just your opinion? People don't just make up those things out of their heads.

CLASS CHORUS. Oh, don't they?

MAE. It is a combination of fact and fiction.

CHARLES. The picture was very dramatic. . . . (Charles is stuttering and speaks in a great rush, batting his eyes.)

VIRGINIA reports on Longfellow's "*Evangeline*." She travels across Indian territory looking for Gabriel. She becomes a nun, and one day finds an old man dying, and he is Gabriel.

FRANK reports on *St. Patrick's Day*. St. Patrick was born in Ireland and taught the word of God. He taught the faith to the Irish. While he was away, the Irish people had dropped back to paganism. Later he became the patron saint of Ireland. There was supposed to be a snake plague, and St. Patrick was supposed to chase the snakes off. He taught the mystery of the Trinity by the shamrock.

JOE. The Nazi spies have not been returned in Ireland. (This evokes a political discussion by various members of the class.)

TOM. Eire has remained neutral for reasons best known to herself.

FRANK. The British starved them a long time ago.

students a choice of projects appropriate to individual and group interests Teachers in different parts of the country have had success along these lines At a conference in Schenectady, for which Mrs Eunice Bishop served as coordinator, teachers in the fifth, sixth, and seventh grades reported that they had found the following types of activities successful for gifted children

Reading activities that set no limits for the competent child but encourage him to achieve superior goals

Functional arithmetic activities that challenge gifted children

Purposeful writing projects

Creative expression through art

Science experiences that interest children in research and which develop a scientific attitude

School community service projects

Social experiences in which gifted children assume suitable responsibilities

Leadership responsibilities in student government

The teacher of the gifted must be alert in providing for them a balanced program which includes many experiences in the arts and sciences, and which also presents opportunities for both group and individual recreational activities

When the necessary facilities are not available in a particular school, the teacher and administrator go further afield to secure them One elementary school boy, exceptionally gifted in science, lacked access to appropriate equipment and instruction The principal therefore made adjustments in the boy's schedule in order that he might study science in the nearest junior high school that had the required facilities

Opportunities for school activities which the gifted child will find challenging have been summarized as follows by Dr Nancy Young, at one time a teacher of gifted children under the supervision of the late Dr Leta S Hollingworth

# 1 Discussions

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## 2. *Special Class Projects*

- a. Being responsible for assignments requiring critical thought
- b. Planning for class activities, serving on steering committee
- c. Acting as tutor of individual pupils or groups
- d. Reading and classifying various materials for class library, science corner, and exhibit room
- e. Publishing a class newspaper which encourages all forms of creative work

## 3. *Research*

- a. Leadership of research committees
- b. Reading books on advanced levels
- c. Using research material of adult difficulty
- d. Scanning and classifying reading materials for the school library
- e. Investigating original sources for authentic background for writing plays and radio scripts

## 4. *Club Activities*

- a. Assisting in organization of clubs
- b. Preparing agenda for club meetings
- c. Acting as secretary of club or of committees
- d. Proofreading club publications
- e. Reporting on club activities in school assembly

In general, gifted children will profit from experiences in seminar methods, from opportunities to experiment in well-equipped science laboratories, and from activities in creative art and in music. Drill should be given only when needed and only when the gifted child clearly sees the necessity for it.

## *Awareness of Conditions Affecting Learning*

Occasionally a teacher may be disturbed in noting that a gifted child fails to make expected progress. If the pupil has been encouraged to express himself freely, he may through personal writing reveal factors that are blocking his efforts. One gifted fifteen-year-old girl in the ninth grade wrote:

Adequate knowledge of home background is necessary before a teacher can effectively counsel and guide a child who presents problems. In the case of some gifted children, this guidance is especially needed because of the intensity of their reactions.

### *Concerted Action*

Teachers have described ways in which they have individualized instruction even in large classes. The following situations, described by teachers, show ways in which they have met the needs of individual pupils.

Two girls, friends, were in my class in biology. They were indifferent pupils, disciplinary cases, and cut class frequently. I arranged to see their parents. I also praised the pupils for their good points (of which they had a few), gained their confidence, had them change their minds about leaving school. They were made members of the laboratory squad, were given responsibilities, were encouraged, and are now doing well. I was surprised at the results, for they were just like those that the textbooks describe.

This term a pupil was transferred to my Bio 4 honor class from a normal class where he had been rather difficult. He seemed to think he was not learning all the technical names he wanted to. We don't do too much of this type of learning in our honor class, either. Therefore I tried to engage this boy in an interest for project and research work. He is now leading a group who plan to hatch chickens. His brother has made an incubator for him. The boy is president of the Research Club. He is charming instead of surly. In this case the disgruntled teacher and the chairman were wise enough to realize that the boy needed an outlet for his energy and intellect, not a penalty.

Innumerable examples could be cited of the ways in which teachers have released the creative energy of gifted pupils in their classes: (1) modifying their program of studies to include more challenging subjects and more opportunity for creative work, (2) helping them to work on class projects that make a real contribution to the class, the school, the community, (3) providing a rich environment in which they may do independent work in science, art, music, and other fields, (4) forming informal groups in which they will learn the techniques of working happily with others toward a common goal, (5) giving them opportunity to learn how to use the human and physical resources of the community to enrich their daily program and also to gain real opportunities for service in the local community.

## Personal Contacts Outside of Class

Questions such as "What would you like to talk about with older persons?" "What have you liked about your talks with teachers or counselors?" elicit responses that show the kinds of interviews pupils want. Pupils frequently summarize their interviews with teachers and counselors by the statement, "They told me what to do." If a pupil comes to a teacher or counselor for advice, his expectation should certainly be recognized and accepted, not completely ignored. The expectation that he will be told what to do arises partly from the kind of experience he has had in the past. If instead he had had the satisfying experience of thinking things through for himself in an atmosphere of acceptance of his point of view he would probably use his interview time in a different manner. At the present time, however, many pupils come to the counselor with the expectation of getting advice. If the suggestions they receive fit in with their interests and plans, they go away with a favorable attitude toward the counselor. If the advice runs counter to their desires or is given in an arbitrary or domineering manner, they speak unfavorably of the conference.

Some pupils want to profit by the experience of the older person, as in the following instance: "When I talk to an older person, I listen for advice because I realize that he or she has had more experience than I. I enjoy talking about profound subjects and getting the different views, studying and evaluating them and exchanging my own."

Another said: "The things I like to talk over most with an older person are (1) how I can plan a successful future, and (2) mistakes that others have made that I would profit by. An older person has learned much more than I have at the present time, and every little bit of knowledge I could receive from an older person would benefit me."

Others seek vocational information from adults who know a particular job. "I would like to talk to a person who is working in the field that I would like to enter. I would like to talk over the details of this job, such as advancements, pay, type of work, etc."

The teacher-counselor plays an important role in educational guidance. Pupils say that counselors have helped them in ways such as these: "My counselor has done a great deal to iron out

some program difficulties "Most of the teachers and counselors are willing to discuss questions of marks, etc., in a helpful and constructive manner

Although practically no evidence of nondirective counseling was obtained in the schools' studies, some pupils did recognize the importance of their taking the initiative in seeking help. One boy wrote as follows in response to the question, "What did you like about the talks you have had with teachers and counselors?" "Well, they tell you what is wrong or right. The counselor tells you if it is all right to take this subject, if not, he gives you another one. Your teacher helps you in your subjects. I think you should ask a teacher or counselor to help you with whatever you need help in."

Some students maintain cordial relationships with teachers and gain advice simply and naturally as part of friendly intercourse. "To talk to a teacher is just like talking to a friend. You can expect a smile and a frank answer to your question. I enjoy speaking to all the teachers I have had and they have treated me as a friend. I once feared speaking to a teacher, but now I realize teachers do not bite, and at times can be depended on for help."

Occasionally pupils recognize the relationship itself as the important thing. The thing I like most about talking to teachers and counselors is that I get to know just what they really are like, and what I can expect from them and vice versa."

It is very common for pupils to feel that teachers and counselors are too busy to give them the help they need. One pupil said, "I would like to discuss my college career with an older person but I haven't found anyone here that I could talk to and feel that it was worth while. Most of the time the teachers and guidance counselors don't have time for a nice long conversation with us."

In one school system very few student leaders seemed to have had effective counseling. The following kind of response was common. "I decided to be a personnel worker because I've always liked people." "I've always wanted to be a doctor." The pupils seemed to have had little help in choosing a vocation, though some of them obtained considerable information on their own initiative. However, there was some evidence of effort to encourage pupils to take responsibility for making their own

choice of courses and vocation, and for solving their personal problems.

Persons whom pupils specifically mentioned as having helped them were:

*Football coach*

*Dramatic teacher:* "Helped with diction and gave me self-confidence."

*Biology teacher:* "Brought me closer to living things."

*Latin teacher:* "When I entered her class I had no intention of going to college or entering any profession; now I intend to go into the field of law."

"Gave me a sort of push that made me overcome my hatred for Latin; and showed me how to learn. She has faith in all her students so that they seem to get along better."

*Gym or health education teacher:* "Interested me in sports."

*Club sponsors:* "I was grateful for their understanding of student problems and for driving me into accepting responsibility and carrying it."

"They encouraged me to do extra outside work which will benefit the students."

*Teacher-counselor:* "Helped me plan my high school program and gave me the push I needed to run for office. She is a person I can talk to about conflicts I might have with other teachers and get advice as to what to do about them."

One high school youngster summed up his feeling about his interviews with teachers in these words: "Adults are sort of hard people to talk to at times. They seem to forget that when they were young, things that seem trivial to them now were of great importance to them. I like to talk about the things I do outside as well as in school."

Every conference with a gifted child can be made to contribute toward his best development. It may be only the experience of being treated with consideration; it may be the experience of relating himself in a friendly way to another person. It may be the opportunity to clarify his idea of himself and his relations with other persons. With gifted children it is especially important for the teacher or counselor to listen, to try to understand the student's point of view although the counselor may not approve of his attitude or behavior. Occasionally the counselor will interpret and summarize. When the student needs information, the counselor will supply it or refer him to reliable sources.



## **Preparation of Teachers of Gifted Children Knowledge and Skills**

All that has been learned through experimentation and research about teacher education in general applies to the preparation of teachers of gifted children. The hope for better education in the future lies largely in the teachers' colleges and schools of education. It is they who select students well qualified by personality and send out teachers who have an understanding of child development and skill in counseling. The task of these institutions of higher learning is to find gifted teachers and to give them opportunities to observe, identify, instruct and guide gifted children in close cooperation with parents.

### *A Point of View*

Prospective teachers should early acquire a basic, pervasive, functioning point of view — the attitude that every individual should be helped to develop his potentialities as a person and as a citizen. Indeed, selection of students for teacher training should take into account the applicant's attitude toward people — whether he has an understanding of people and is eager to help every child develop his capacities and whether he has special talent for personal happiness and social usefulness.

### *Counseling Techniques*

Since highly gifted children need help in discovering and developing their special potentialities, and also have a high degree of sensitiveness that makes them emotionally vulnerable, their teachers should acquire skill in counseling and especially in administering "mental hygiene first aid." Teachers in training should be helped to understand that if talented persons are queer and poorly adjusted, their behavior is due to some cause which might be discovered and dealt with regardless of the age of the person.

### *Group Techniques*

Another task of effective teacher education is to impress student teachers with the necessity of maintaining for specially gifted children, as well as for all children, classroom atmospheres in which pupils can work happily and constructively with other

members of the group. Gifted children need group experiences to develop wholesome social relations and a balanced personality. Group methods offer a way of fostering their intellectual interests without sacrificing necessary relationships with their peers. The fact that a gifted child is unique does not make it any less necessary for him to learn to live with his fellows. Student teachers should learn how to group pupils within a class for different kinds of learning experiences, without segregating them in any formal way. In England, ability groups are formed in each subject. A pupil who is in the highest group in algebra may stand at different levels in other subjects. This form of organization makes it possible to meet the educational needs of pupils of various grades of ability and achievement without any stratification according to general mental ability.

To develop techniques for guiding group work, students preparing to teach should have abundant opportunities for practice. In their own classes and in their field work each should have the experience of participating as member, as leader, as observer, and as recorder in informal groups.

### *Work with Parents*

Ability to work with parents is another essential part of the equipment of teachers of gifted children. They should be prepared to help parents who fail to provide the experiences their gifted children need, as well as those who exploit their talented children. Teachers in training should come to understand how parents' deep-seated attitudes and needs stem from their own childhood experiences. This understanding will make teachers sympathetic even with the parent who is exerting a blighting effect on a gifted child. Laboratory programs provide student teachers with opportunities for home contacts as well as for contacts with community agencies concerned with child welfare and guidance.

### *Preparation of Teachers' Program, Courses, and Practice*

Teachers' colleges and schools of education are concerned with the best development of their students as persons and as teachers. To this development the classroom experiences, the laboratory

school, the extraclass activities, and the counseling service all contribute

### *The Integrated Curriculum*

In progressive teachers colleges child development is integrated with curriculum, guidance, and practice teaching. For example, in a number of teachers' colleges, the course in child development begins with case studies and includes observation of children as an important feature. It includes many references to the child and the curriculum and to guidance as an integral part of teaching. Understanding of group work methods is obtained through field experiences in group guidance and leadership. These activities are planned and supervised by the college instructor in cooperation with professional group workers in social and community agencies. Every student has experience in working in a social agency and thus gains understanding of the community and its problems. The core course is related to fundamental courses in mental hygiene, parent education, principles and practice of guidance, and counseling techniques.

### *Special Class in Teaching Gifted Children*

A few institutions offer a special class in the psychology and education of mentally accelerated children. The following is an outline of such a course,<sup>3</sup> designed to highlight the educational needs of these frequently neglected children.

- 1 Introduction: need for an educational program for the intellectually gifted child, overview and points of view
- 2 Identification of the intellectually gifted child, flexible procedures, factors to be considered, use of parents' and teachers' judgments and tests, other considerations
- 3 Characteristics and educational needs of intellectually gifted children, home background, physique and health, social and intellectual characteristics
- 4 Special gifts and talents
- 5 Responsibility of the community
- 6 Equipment and materials
- 7 Educational adjustments: enrichment, acceleration
- 8 The teacher: desirable traits and preparation

<sup>3</sup> Summarized from an outline prepared by Dr. William P. Schwartz, Principal, assigned to Elementary School Division, Board of Education, New York City, for supervision of the program of education for intellectually gifted children.

### *The Laboratory School*

Of great importance in a teacher education program oriented toward gifted children is the laboratory school. This plan offers every student daily opportunities to participate with children and youth in a laboratory situation, rich in creative experience. Under such conditions the student learns the basic facts of human growth and development and becomes acquainted with ways of discovering and conserving talent. These opportunities for experience are much more frequently provided for prospective elementary than for high school teachers. Yet the latter need opportunities to understand and appreciate adolescents and to learn how to encourage their initiative and originality. This experience can be obtained in a laboratory school that provides for the development of talent in writing, drama, music, the fine arts, and research.

### *Extraclass Activities*

Student activities are an important part of preparation for teaching. In these activities students learn to work with others, to take responsibility, to listen and to contribute to group discussion, to develop special talents and social abilities. For example, student faculty committees, which coordinate student activities, help new groups to form, and study student life on the campus, furnish valuable experiences. In the student council, students learn methods of group work and obtain practice in governing themselves. In other clubs and committees students learn many skills useful to them as future teachers of gifted children and youth.

### *Counseling Service*

Similarly, the experience of being expertly counseled is a valuable preparation for teacher counselors. For this service a functioning faculty advisory system is necessary. An effective faculty-counseling service requires selection of faculty members qualified by personality, regular meetings at which they may discuss their problems and procedures, adequate time for interviews with counselees, usable cumulative records, and a well trained

personnel worker to serve as consultant and specialist in handling the more complex and time-consuming cases.

### In-Service Education of Teachers

Since only a small proportion of the total teaching force comes out of the teachers' colleges each year, there is need for helping teachers-in-service to improve the quality of their work with gifted children. Many effective methods of in-service education and supervision have been developed. It is necessary here to mention only a few. (1) casual conversations with individual teachers in which they are encouraged to express and develop their ideas about the education of gifted children, (2) exchanging accounts of successful procedures of work with gifted children, (3) case studies and conferences concerning children who are not developing their potentialities, (4) child study groups and parent study groups, (5) institutes, conferences, faculty meetings, workshops, university summer and extension courses, and seminars devoted to the practical problems of educating gifted children, (6) excursions and visits to social and guidance agencies, industries, professional and technical schools, and other places of interest, and (7) informal reading and study groups which are provided with fine professional books related to the education of gifted children.

### Concluding Statement

The effective teacher of gifted children is first of all well qualified by personality. He is alert, friendly, understanding, constructive in his attitude toward every individual. His main concern is to help each child develop his potentialities. To do this he gains an understanding of child development and learns the counseling and group work techniques appropriate to the informal classroom. Recognizing the importance of parent-child relations and of neighborhood influences, he becomes acquainted with parents and community life.

The teacher evaluates his work by obtaining evidence of desirable changes in individual pupils—growth in health, social sensitivity and competence, emotional stability, and effective use of emotional energy, as well as in intellectual achievement. Such

evidence is best obtained from case studies of the pupils with reference to provisions made for their growth and development.

Institutions for the education of teachers are responsible for selecting and sending out young teachers who have these desirable qualifications and abilities. For teachers-in-service higher institutions offer summer and extension courses as well as integrated programs of intensive graduate study. For both undergraduates and graduates the college or university provides opportunities to observe and to participate in a laboratory type of experience. City and state systems provide helpful supervision and other forms of in-service education for all teachers who want to help gifted children live more abundantly and serve society more effectively.

## MENTAL HYGIENE OF GIFTED CHILDREN

If conditions in the home, the school, and the community were always favorable to the optimum development of gifted children, these children would display few mental hygiene problems. Conditions are obviously not ideal, the needs of gifted children are not adequately met. Consequently, despite their superior insight and adaptability, some gifted individuals are so disturbed emotionally that they fail to make a satisfying social adjustment.

Almost all of the problems of gifted children stem from normal or basic desires and needs which are denied normal satisfactions. Physical needs, emotional needs, and social needs should all be met if the child is to maintain a balanced total personality. When satisfactions are difficult or impossible to find, the child may resort to undesirable ways of meeting his needs — ways that set him apart from his fellows.

Maintenance of mental health among the gifted is especially important for several reasons. First, undeveloped talent is expensive to society; it represents a lost contribution. Second, misdirected ability or talent, as in the case of the criminal or the mentally disturbed leader, constitutes a social menace. Intelligence and talent can be misused for aggressive, destructive purposes. Third, the maladjusted individual himself fails to attain the deep satisfaction that accompanies self-fulfillment and service.

The goals of mental health are wholesome and satisfying human relations and realistic and socially acceptable attitudes to-

ward oneself, other persons, and the world. Mental health is an ideal toward which individuals make varying degrees of progress. There is no hard and fast dividing line between mental health and mental illness. However, in describing degrees of adjustment it will be useful to follow the categories of adjustment and maladjustment set up by Terman and Oden.<sup>1</sup>

1. "Satisfactory adjustment" is exemplified by persons "essentially normal" who have the ability to cope adequately with difficulties in their personal make up or in their environment. Worry and anxiety may appear when warranted by the circumstances. There may also be a "tendency to be somewhat high strung or nervous," but such a tendency is not so pronounced as to "constitute a definite personality problem."<sup>2</sup>
2. Some maladjustment is displayed by "subjects with excessive feelings of inadequacy or inferiority, nervous fatigue, mild anxiety neurosis." These "presented definite problems, [but] were not beyond the ability of the individual to handle."<sup>3</sup>
3. Serious maladjustment is revealed by two types of individuals
  - a. Non psychotic persons with "marked symptoms of anxiety, mental depression, personality maladjustment, or psychopathic personality. . . . Subjects with a previous history of serious maladjustment or nervous breakdown (without psychosis) were included here even though their adjustment at the time of rating may have been entirely satisfactory."<sup>4</sup>
  - b. "Those with a history of psychosis or definite mental breakdown requiring hospitalization."<sup>5</sup>

Mental health is dependent upon emotional maturity. Gifted persons who are well on the road to achieving emotional maturity recognize their emotions and accept them as natural, select attainable worth-while goals, find satisfaction in both intimate and casual relations with others, respect others who have far less ability and different interests, serve the group without sacrificing their own best way of life or compromising the convictions that they have reached by sound reasoning. They also tend to meet unexpected strains and disappointment with equanimity.

In this chapter we are concerned with such questions as these

<sup>1</sup> Lewis M. Terman and Melita H. Oden, *Genetic Studies of Genius*, Vol. IV, *The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947).

<sup>2</sup> *Ibid.*, pp. 92-100.

<sup>3</sup> *Ibid.*, p. 100.

<sup>4</sup> *Ibid.*, pp. 100-101.

<sup>5</sup> *Ibid.*, p. 93.



Do gifted children reach the goals of mental health more frequently than other children? Is it more difficult for exceptionally gifted children (IQ's above 170) to reach these goals than for moderately gifted children (IQ's between 130 and 150)? Do gifted children have special problems and perplexities? If so, how do they meet these problems? How can parents, teachers, and specialists in guidance help to alleviate the maladjustment of gifted children?

### Superior Mental Health of Gifted Children and Young People

In the interest of clarity, this chapter should include a few generalizations about the character and personality of gifted children. In general, these children are superior in mental health as well as in mental ability, they are accelerated in character development as well as in intellectual accomplishment. Contrary to popular opinion, gifted children are not emotionally unstable. Lewis's<sup>6</sup> study of superior children in the elementary school, Terman's genetic study of genius reported in detail in Chapter Three, Hollingworth's researches reviewed in Chapter Four, Witty's study of one hundred gifted children,<sup>7</sup> and other investigations—all present evidence that gifted children are equal or superior to the general population in degree of emotional maturity, number of behavior problems, and ability to adapt to conditions that they cannot change. On every one of a battery of seven character tests the gifted group were above average. They also scored higher in emotional stability and wholesome social attitudes. Case histories and ratings by teachers and parents confirmed the test results.

At the age of thirty five, Terman's gifted group showed somewhat less emotional instability than the general population, less serious personal maladjustment, and fewer cases of insanity, delinquency, suicide, alcoholism, and homosexuality.<sup>8</sup> Eminent persons generally have marked strength of character and persistence as well as great intellectual capacity. The areas in which gifted

<sup>6</sup> William D. Lewis, *A Study of Superior Children in the Elementary School*, George Peabody Contribution to Education, No. 286 (Nashville, Tennessee: George Peabody College for Teachers, 1940).

<sup>7</sup> Paul A. Witty, *A Study of One Hundred Gifted Children*, University of Kansas Bulletin of Education, Vol. II No. 7 (Lawrence, Kansas: Bureau of School Service and Research, University of Kansas, 1930).

<sup>8</sup> Lewis M. Terman and Melita H. Oden, *op cit*.

financial status. Some parents had exploited their children's cleverness, others had pushed and overstimulated them, still others had been possessive and overprotective. Some parents, evidently afraid of being outwitted, had tried forcibly to repress their bright offspring. More than half the children had been handled inconsistently and almost half had been subjected to corporal punishment. To these unfavorable home environments the children had responded with aggressiveness and self-assertion that had caused their referral to the guidance clinic as behavior problems.

Teachers likewise failed to provide the experiences these children needed for their best development. The teachers recognized only those children of superior ability who strove for honors and awards and who were socially well adjusted. In only five cases had teachers provided an enriched program for the gifted children. In general, these children had had little or no guidance in utilizing their abilities and in making satisfying personal adjustments. So called behavior problems which arise out of home and school conditions like these often represent the child's efforts to obtain the conditions he needs for his self fulfillment.

After ten to twenty years these children were followed up and retested. Their IQ's had remained consistently high, and most of the disciplinary problems, for which they had originally been referred, had disappeared under the guidance of the clinic. In some cases, however, personality problems had developed. The two most important factors in good personality adjustment seemed to be consistent and affectionate training in the first years of life, and the energy and initiative which the children themselves applied to problems of living. Many of them seemed to realize the value of social adaptation and learned to direct their emotional energy into socially approved channels.

Some of the normal emotional problems of adolescence are vividly described by a gifted senior in high school who has given more thought to them than most teen-agers. This is the way Don looks at it:

So far, I have found the teen age period full of uncertainty as well as carefreeness. It seems to me that the average adult has forgotten or perhaps never experienced the frustrated emotions involved in growing up. I feel that I am finally becoming settled in my mind, but up until now I have experienced a melee of fear, anxiety, and uncertainty.

The high school age just isn't all that it is depicted as being. An inferiority complex does not help the situation. I am trying to overcome such a complex at present and it is not a simple task. "What makes me feel inferior?" I keep asking myself. It's hard to say just what is causing this complex, but it undoubtedly stems from experiences in my childhood.

This complex, coupled with the normal problems of growing up, has made for some rather unpleasant memories in my life. However, I am a generally happy person and feel that I can overcome the obstacle of inferiority. In my situation, it is not due to financial or intellectual status, in which categories I am comfortably situated. However, the cause is of little consequence now.

An inferiority complex has led me to some pretty absurd thinking at times. At a public gathering I often imagine that everyone is staring at me. This self-consciousness is a result of my feeling that I don't make as good an impression as some of the other boys. I am beginning to realize how foolish it is to be so concerned with myself, therefore, since I can look at the problem rationally, I am sure I am overcoming it.

More important than the inferiority problem is that of being "mixed up" about things in general. During adolescence, one's whole outlook on life changes. He sees things with his own eyes and not through the eyes of his parents. He must judge people and the world by his own standards. At this point he has two philosophies of life, we might say, that of his parents, and his own. These two philosophies are in constant conflict until the youth can get them straightened out in his mind. This has been one of my main problems. I find my own ideas in conflict with those of my parents and this results in a disturbing situation. I want to read different newspapers than they, they disagree with my choice of profession. In short, I have been influenced by the new generation growing up with me, while they seem to be living in the past.

Don is at the point of finding a solution. He has taken the first step—that of trying to understand the situation. His next step will probably be to talk over his problems with his parents. If he and his parents understand each other, they can iron out many disagreements.

But perhaps Don cannot do this with his parents. He may ask the minister, or a teacher or counselor in whom his parents have confidence to tell them how he feels and what a teen age boy needs.

Gifted children become concerned very early with problems of religion and a philosophy of life. Insofar as a religious orientation

to life contributes to mental health, it should be fostered in the education of gifted children.

The optimum development of the gifted child requires attention to his emotional and social life as well as to his intellectual needs. In fact, neglect of emotional and social factors may interfere with his intellectual development. Emotional blocks frequently prevent gifted children from realizing their potentialities. A striking example was that of a six-year-old child whose speech was comparable to that of a two-year-old and whose rating on an intelligence test was very low. His well-to-do, intellectual parents were ashamed because they believed they had a mentally deficient child. In a series of play therapy sessions in which he felt himself completely accepted and understood, he gradually lost his anxieties and began to express himself in almost poetic language. His intellectual ability was freed and his true IQ proved to be 130 or higher.

Feelings of inadequacy, of "aloneness," of failure in social relations, fear of the future, and lack of confidence in their ability to make their own decisions are frequently mentioned by older gifted adolescents.

### *Feelings of Inferiority and Inadequacy*

Although gifted children reveal fewer symptoms of instability than children generally, they sometimes experience feelings of inferiority. A gifted child is especially likely to feel inferior in physical skills. One reason is that it takes him so much longer to learn to play baseball or to skate than to master intellectual tasks. It also happens that he is often less interested in physical than in mental activities and consequently does not learn the skills that make young people popular and accepted.

He may also derive a sense of inferiority from associating with older children who have an advantage in active games and sports and in social sophistication. If the gifted child has not acquired the requisite physical skills, he is likely to be left out of the group. Being younger and smaller than the other children, he feels socially inadequate. According to the opinions of more than half of a group of fifty-six gifted youngsters who had entered high school at the age of eleven, thirteen was the best age for becoming a freshman. At that age, they felt, one could hold his own.

I didn't care whether I had friends or not. My appearance became sloppy, and I spent my time avoiding people. While other girls of my age spent their time having fun with friends, I lost myself in a desolate, lonely world of my own. Finally it became so unbearable that I started visiting a psychiatrist. She told me that my woeful lack of self-confidence comes from not having my opinions and ideas respected in my home from childhood on. My mother dominated my whole life and until I grew independent of her, my inferiority complex would remain. I tried to think for myself, but it is difficult, and I am not progressing quickly enough.

In this case, lack of self-confidence and inability to make and keep friends were associated with deeper personality problems.

Adolescent boys who have been accelerated have special difficulty in establishing heterosexual relations. They are not taken seriously by the older girls, who are physiologically more mature. One senior boy described this problem as follows:

I am certainly not extrovert. As a result, I find myself not immensely popular, but not without friends (mostly boys). I have often felt left out of a mixed group of teen-age boys and girls because I have always been on the shy side, especially with girls. In the high school I get along well with boys, but with mixed cliques I find myself left out. However, I do not consider this too much of a problem.

Girls are not at the same disadvantage as boys; they mature more quickly, and younger girls are accepted by older boys. This is one reason why intellectually superior girls are often better adjusted socially and emotionally than superior boys.<sup>11</sup> However, girls also have their problems in establishing satisfying heterosexual relations. One sophomore girl wrote:

Foremost among my problems is the date situation. It is nerve-racking waiting for the phone to ring every Monday and Tuesday night. When it does, it often turns out to be for my mother or sister.

Both Terman and Hollingworth found that children with IQ's above 170 face serious problems of social adjustment. The higher the child's intelligence, the greater his difficulty in adapting himself to the more ordinary interests, activities, and conversations of his companions. Weary of thinking, playing, and working on the relatively immature level of his chronological equals, he tends to

<sup>11</sup> John W. Musselman, "Factors Associated with the Achievement of High School Pupils of Superior Intelligence," *Journal of Experimental Education*, Vol. XI (September, 1942), pp. 51-63.

withdraw from social contacts and devote himself to his own more satisfying solitary pursuits. He seldom finds a friend who has like interests and abilities. If he is an only child, as is often the case, he cannot turn to brothers and sisters for companionship.

In order to prevent the highly intellectual child from becoming a shy, unsocial adult, "unmindful of human relationships," the teacher should try to create an atmosphere of friendly acceptance. He may encourage group discussions on problems of social relations or may even take the lead in forming a small congenial group such as a science club, book club, camera club, or swimming or skating group in which the abilities of the gifted child can be utilized in a social situation.

Highly intellectual children and those with special talents in art, music, and other fields need special environments in which they can attain their best possible growth. Some of them also require expert educational and social guidance if they are not to become neurotic or mentally ill.<sup>12</sup> It would seem quite possible to provide a healthy program in which the gifted child could develop socially and emotionally and at the same time find expression for his natural intellectual interests.

Many bright adolescents, through their own efforts, make a satisfactory social adjustment, such as that described by a senior boy:

I had lived all my life in a small rural village, which I loved. I liked my neighbors, my home, my dog. My lifelong friends lived around me. During my sophomore year we moved to a rather crowded apartment in the city. My first few weeks in my strange new surroundings were more than difficult. I was lonely and homesick. I didn't know a soul in my new high school. I even talked to my father about staying with friends in my old home and finishing school there. He convinced me that this would be unwise. So I decided to make a sincere effort to make new friends and find new interests here. I soon found the young people in this school just as friendly as in my home town. After a month or two my life of friends and interests increased tremendously. I joined the Y M C A, took part in school affairs, got acquainted with my teachers and neighbors and became a member of an outside of school boys' club. I am now a senior and I find myself completely happy and contented in my present location.

<sup>12</sup> Ernest Horns, "The Guidance of the Superior Child and the Prodigy," *Handbook of Child Guidance*, edited by Ernest Horns (New York: Child Care Publications 1947), pp. 112-132.

One sixteen-year-old girl thus expressed her feeling of inadequacy and her difficulty in making decisions

Very often I feel uncertain and unsure of myself I know I have very little self confidence and this has handicapped me in several ways Even now in high school I am afraid to go over and talk to a group of girls I do not know very well because I am afraid I am not wanted I am very dependent on my mother and I think this is partly because my mother does not give me enough responsibilities I have always found it very hard to make decisions for myself I especially remember how upset I was in my last term of elementary school because I did not know which high school to go to My parents did their best to make me realize that all schools are more or less alike and that whichever school I chose I would be happy if I tried to be a good student I finally decided on this school and have been satisfied with my choice. But my uncertainty did not stop when I entered high school, for then I found I had to make even more decisions for myself I am still unsure of my future and I do not know whether I want to go to college or business school My parents have always said that I think too much about myself and I know this is true I know my faults and the things that trouble me, but I find it hard sometimes not to be disturbed

Many gifted youngsters dread a public performance One sixteen-year-old boy described in detail how he felt about playing the piano at a recital—heart pounding, hands perspiring, and knees shaking A fourteen-year-old girl wrote about a similar problem and its solution.

When I was about nine years old, I had to give a piano recital at my teacher's home As I sat waiting for my teacher to call me, many thoughts went through my head—suppose I should forget all the notes or my hands get numb When I was called, however, I played all right. But every time I had to play, I was afraid—until last June. Then I thought things out before I sat down to await my turn to play. I figured out that no one is perfect and if I didn't play every note, it wouldn't be noticeable. And I also thought that when I played at home, I was always at ease because no one was around I walked up to the stage when I was called, and I felt entirely different. I played as if I were playing for myself and made no errors I guess I showed how I felt in my playing. For the first time everyone came up to tell me how well I played. I felt I had really accomplished something in the five years.

Another girl slightly older, reasoned that practice would prevent nervousness in speaking before an audience. She wrote.

A fifteen-year-old boy likewise met the problem of making friends in a new high school in a satisfactory, matter-of-fact way

I noticed that a boy sitting in front of me was in about the same predicament as I was. He was a little more talkative than I, and was already talking to two seniors. They seemed friendly, so I spoke to them and was suddenly included in their conversation. I soon felt much better, and in what seemed a short time the period was over. I became very friendly with both seniors, and the other freshman is now one of my best friends.

The way in which gifted children think through their emotional difficulties and problems of social relations is further illustrated in the following excerpt from a composition by a fifteen-year-old girl. Her parents had gone away on a trip and had asked her sister and brother-in-law to stay with her. She writes:

I felt horribly lonely, which was strange, for I know I would have felt completely happy if I was all alone. Why should their presence make me feel that way? It took me a few days to think the situation out. Really, it was very simple. They had each other and I was alone. Moreover, they always closed doors behind them, and while I respected their need for privacy, it gave me a terribly locked-out feeling. As soon as I realized the cause of my feelings, I knew the only thing to make me happy again was to feel more secure with my sister and her husband. As fate would have it, my sister caught a cold and was forced to rest in bed. That put responsibility on me. This was just what I needed. I didn't have time to think about myself and I became an indispensable person at home. Now that I realize that I, too, am needed, I will not become depressed and feel unwanted when everything is back to normal.

Children and adolescents dislike to be "different." As one gifted girl said, "It's bad enough to be taller than the boys, but when you're brighter, too, it's fatal!" For this reason gifted children are reluctant to use their true abilities.<sup>12</sup> To have friends they try to be like other children. Consequently, they do not develop their full potentialities. This is one kind of maladjustment, whether recognized as such or not.

Teachers and parents can intensify this difficulty by giving the gifted child so much special attention that the other children feel resentment toward him. They can help to mitigate the difficulty



by providing group activities to which the gifted pupil makes a contribution which the other members recognize as valuable and necessary.

It is true that some eminent persons have attained recognition and have made distinguished contributions by compensating for their repressions or deprivations. Accordingly, an emotionally disturbed gifted child "may find a socially sanctioned way of living with his maladjustments in an academic career."<sup>14</sup> Failing to obtain the affection and social satisfactions that he craves, he sometimes turns to intellectual endeavor in which, at least, he can excel and win admiration. He may have been encouraged to take this academic way of escape by teachers and parents who value intellectual achievement highly, and even consider the bookish person of a higher order than the nonbookish majority. Although he may win the respect of some of his classmates by his superior accomplishments, he often alienates others. Such an adjustment is of course relatively unsatisfactory.

Deep in his heart, the adolescent is not satisfied with this solution. A senior with an IQ of 150 expressed her dissatisfaction poignantly:

When I entered high school (after a year spent with an invalid sister) I found that I no longer knew how to get along with my contemporaries. Trying to convince myself it didn't matter, I threw myself into my studies and outside reading. Unfortunately studies aren't a very good substitute for friends, and I was extremely unhappy and lonely during my first three years in high school. Whenever I was particularly hurt or miserable, I retired to my books — to forget. This, as anyone can see, was not wise as it made me even more out of place and self-conscious. If anyone was ever heading directly toward a nervous breakdown, it was I.

At the beginning of my senior year, I acquired a new teacher, who tried to give me confidence in myself. To a large extent, she succeeded, although there is a great deal more to do. I can at the moment carry on a conversation without wishing to be on the other side of the world. As yet I find it much easier to get along with older people than with my own age group.

I think a great deal of suffering could have been avoided if someone had taken some interest in me earlier, if someone had tried to bring me out of myself. If someone *had*, I don't think I would have cried myself to sleep so many nights during my first three years of high school. If

<sup>14</sup> Lawrence K. Frank, "The Reorientation of Education to the Promotion of Mental Hygiene," *Mental Hygiene*, Vol. XXIII (October, 1939), p. 532.

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<sup>14</sup> Lawrence K. Frank, "The Reorientation of Education to the Promotion of Mental Hygiene," *Mental Hygiene*, Vol. XXIII (October, 1939), p. 532.

there had been someone to help at the beginning, I don't think it would have been as hard as it is now for me to get along with people

Observation of this gifted but seriously disturbed girl confirmed her own statement about her aloofness and her teachers' lack of understanding. In the cafeteria she sat alone, eating her sandwiches. A group of youngsters near her were merrily talking, but she did not pay any attention to them. Plainly their activities did not seem worth while or interesting to her.

Her feeling that others did not understand her was confirmed by observation in a classroom. She was concentrating on the lesson and once or twice raised her hand to give her opinion, but the teacher did not call on her. After several pupils had failed to answer a question, the teacher finally called on her. She answered correctly at once. All the teacher said was, "Be careful of your speech. Why do you use so many 'ands'?"

Despite her keen understanding of her problems, this girl is unable to solve them without expert help. She needs concerted, unobtrusive consideration from all her teachers.

### *Failure to Realize Intellectual Potentialities*

Maladjustment in school work is rare in elementary grades but more common in college. Numerous reasons for unsatisfactory college work have been reported by Terman and Oden. Lack of mental ability to do college work was in general ruled out, physical illness was seldom the cause of failure in college subjects.

More important were habits of idleness, unwillingness to do routine assigned tasks, excessive amount of work for self support, or the deliberate choice to give preference to social and extracurricular activities. Sometimes, though not often, social maladjustment or immaturity played a part. The most common explanation given by the subjects was that in high school they had made high marks without doing any serious work and that in college they underestimated the amount of work necessary to secure passing grades. A few stated that in high school they had developed feelings of social inferiority because of being younger than their classmates and that on entering college they decided to make good these deficiencies in this respect by going all out for popular activities and the pursuit of leadership.<sup>15</sup>

Some loathed the reputation of being "intellectually highbrow" and feigned ignorance in class. Some were disgusted with college

<sup>15</sup> Lewis M. Terman and Melita H. Oden, *op cit*, p. 157.

instructors and methods of teaching that permitted no initiative "There were a good many instances in which the poor record could be accounted for by lack of proper guidance in the selection of a major field" <sup>16</sup>

Musselman <sup>17</sup> found that a good personality adjustment, as measured by the Washburn Social Adjustment Inventory and Links Inventory of Activities and Interests, was associated with a high average achievement ratio. Poor personality adjustment, however, is associated with the highest achievement ratio. This is another indication that the gifted adolescent who fails to establish satisfying human relations often turns to scholastic achievement for satisfaction, though this course of action does not bring real happiness. A number of other conditions, such as a broken home, poor health, or a foreign home background, likewise seem to stimulate pupils to work harder and compensate for the handicap by achieving school success. Falling in love furnished the incentive for one boy to work harder. His frank personal account of the interaction of social, emotional, and intellectual factors is enlightening.

In order to accomplish anything I must have something to drive for something which makes my actions necessary and worth while. I do not feel that I have ever done anything to the limit of my ability. I never can seem to throw myself fully into any situation. It may be because I don't become interested enough. It may be because I fear to be outdone by anyone. I personally don't know.

I started growing up at a very early age. At the age of twelve I began to shave. My social life has always been important to me. I went around with an older crowd. When I was a freshman, age 13, I started going with a girl who was a junior, 17 years old. I was taken into the gang and felt quite at home. Consequently, when they all went to college I was left in my junior year with those whom I considered emotionally several years younger than myself. I did my best to adapt to the group but only succeeded in becoming tremendously bored. Then last November, I met a girl whom I found to be my equal in maturity. We were exceedingly compatible in temperament and emotional behavior. She represented to me the things that I had been looking for in a girl. Since then we have gone together and become more and more fond of each other. To earn her love, I have worked harder than I have ever worked in my life for anything. Now I stand a chance of losing her. What will I do? I don't know.

<sup>16</sup> *Ibid.*, p. 153.

<sup>17</sup> John W. Musselman, *op. cit.*

### *Difficulty in Choosing, Preparing for, and Entering a Vocation*

Wide interests may cause some gifted persons to scatter their energies and fail to apply themselves to any one major field of study. Since they are interested in and capable of entering so many fields, choosing a vocation is difficult for them. One boy described his varied vocational interests as follows:

At about the age of five, medicine appealed to me as a career and for several years I persisted in this choice. As the years passed, I wasn't so sure, but I gave it little thought as the future seemed so far away. In high school I have discovered that I derive pleasure from writing. I can say, with no intention to brag or with conceit, that I have done fairly well in it. Then again I have always been interested in science, especially chemistry. In my daydreams, I have seen myself a world-famous novelist or a great chemist working unselfishly for humanity. Although I have made no definite plans, I now feel that I've had some experience on which to make a sound choice.

Conflict between the parents' ambition for the child and the child's own vocational interest sometimes has profound emotional reverberations, as in the following instance:

I feel sick and miserable when I think of my future. My mother wants me to teach. She thinks teaching is a respectable and needed occupation, and she tries to drive me into it. I don't want a restricted life. I want to be a musician. But I'm scared to tell her. She always seems to laugh when I'm serious. I hate the sound of her laugh and almost hate her for trying to force her plans upon me. I don't want to hate her because she's really good and I love her, honestly. When I play my beloved piano, time passes unheeded. While I am playing, there is only one future for me—music.

The difficulty of getting a job that enables him to use his high ability is another aspect of the gifted person's vocational adjustment. Many have profited by part-time work experiences which give them a basis for exploring their interests and abilities. One junior in high school wrote:

This part-time job was just what I needed, and I am sure that I profited by the experience. It was the first time I had ever worked, and I liked it. It is good preparation for my future work.

Gifted girls have special problems of vocational adjustment. In numerous subtle ways the girl senses that she is not expected to

entertain the same ambitions as her brother, yet she often has strong vocational interests that are difficult to satisfy because of her sex.<sup>18</sup> However, many vocational fields have of late been opened more widely to women, gifted girls may now enter the fields of psychiatry, medicine, law, and even engineering without being seriously handicapped.

Though many gifted boys and girls are in need of vocational guidance, some solve their problems on their own initiative, as did this junior high school boy.

My major problem came to me about six or eight weeks ago. I was trying to decide what vocation would suit me best. I had no idea what I was suited for, nor did I know of any way to find out. I, of course, had ideas of what I would like to do, but I was not sure I could fill the requirements. I talked to the Dean and others in the Guidance Department but none of them were of any help to me. I talked the matter over with my parents, but they left the whole thing up to me. I had to answer this problem in order to decide upon a college and also to spend my spare time working toward this goal. Then I had an idea. Why not go around to some of the personnel men in some of the large corporations? This I did and with surprising results. They were very friendly and explained the basic and fundamental interests and knowledge required for this particular occupation. After gathering as much information as I deemed necessary, I again talked to my Dean and he pointed out the subjects which seemed to be my best through the last three years. I compiled all the information that I had gathered and set it down on paper, in this way seeing exactly where I stood. I weighed this information in my mind for several days, meanwhile gathering a little more information on certain vocations that interested me more than others. After making my choice I consulted several people engaged in this type of work and talked to them about their reactions to their work and after telling them my interests and plans asked them if they thought I was doing the correct thing. Now, being completely sure of my plans, I went to the Dean and decided upon several colleges to try to get into. My problem is solved and all my spare time goes into activities closely related to my future profession.

### Special Problems Intensified by High Intelligence

Superior mental ability may intensify some of the normal problems of growing up, it may also be helpful in solving others. This generalization has already been illustrated by concrete instances.

<sup>18</sup> Leta S. Hollingworth, *The Child of Very Superior Intelligence as a Special Problem in Social Adjustment*, *Mental Hygiene*, Vol. XV (January, 1931), pp. 3-16.

The dynamic psychology of the relation of superior intelligence to emotional and character disturbances has been most helpfully presented by Bettelheim, whose findings will be summarized here<sup>19</sup>

The able individual, beset by a problem, will first try to meet it realistically by applying what he considers to be his most useful assets, or by using methods that have served him well in the past. The ability to deal with problems by reasoning, studying, and thinking is so highly valued in our society that we often do not realize that such procedures can be inadequate. The gifted child who knows all the answers sometimes develops what we might call an "intellectual pathology." He uses his intelligence to gain the approval of parents or teachers. In so doing he overemphasizes the intellect and blocks avenues to greater gratifications based on emotional acceptance rather than on intellectual admiration. Although a number of articles have been published on the "idiot savant" — the dull individual who is brilliant in some respects — less attention has been paid to "savant idiots" — erudite persons who have not learned to live happily and congenially in our society.

If a boy who is physically strong and well coordinated finds himself frustrated or unrecognized at home, he may take recourse to physical strength to establish his ascendancy over his age-mates. In this way he relieves tensions and gains status and prestige denied him at home. But if he goes too far in bullying other children, the teacher or other adults will soon make him feel their disapproval. Thus, in his case, social attitudes serve as a brake on his potential development into an asocial bully. But such brakes are rarely applied to the very bright child who uses his natural endowment to gain status or prestige in a similarly spurious and asocial way — through intellectualization. He is unchecked for two reasons: he has adult approval, and his age-mates are no match for him intellectually and thus cannot retaliate in kind. In such cases, the intellectually superior child is encouraged by society to develop in ways that will eventually make him asocial.

<sup>19</sup> Contributed for this chapter by Dr. Bruno Bettelheim, Director of the Orthogenic School of the University of Chicago. He expects to publish a longer article dealing with the same topic.

Matters are even worse if a child's personality disturbance arises from a lack of knowledge, as, for example, of complex and baffling family relations. As he tries to understand these matters of vital concern to him but finds his superior intelligence inadequate, he may decide to discard it as a tool of investigation. In some cases this decision may result in a relatively permanent blocking of intellectual activity. Likewise, children who find out too much and feel overwhelming anxiety as the consequence of their exploration, may also erect blocks against further intellectual activity. Still other children who fail to discover what they most wish to know, find that they can use their intellect to learn many other things. For this secondary or substitute activity they receive praise from adults whose approval they value. Only very bright children are likely to achieve such satisfactory results from explorations no longer goal-directed. Their satisfaction lies in the abstract value of the knowledge they have gained and, even more, from the strong parental and societal approval which they receive. To keep this approval, they may divorce the topics of their investigation more and more from anything in which they are genuinely interested and may resist studies along those lines in which a child of their developmental age should be interested. Thus these children, too, show intellectual blocking in fields that are of true concern to them, and at the same time reach high intellectual achievement in other fields. This pattern of response, often encountered in some very bright children who are seriously disturbed, is often unrecognized.

It is well to bear in mind that each individual case has its own peculiar combination of factors — factors likely to be complexly interrelated in the case of gifted children. Wells<sup>20</sup> presented cases in support of his statement that high scores on language tests of abstract intelligence "carry no warrant of successful adjustment to social environments." The cases illustrate various kinds of adjustment difficulties in the presence of high capacities as measured by the verbal and mathematical sections of the Scholastic Aptitude Test of the College Entrance Examination Board, a test which is substantially the modified Alpha of the Psychological Corporation, and a vocabulary range test based on O'Conner's

<sup>20</sup> F. L. Wells, "Adjustment Problems at Upper Extremes of Test 'Intelligence': Cases XIX-XXVIII," *Journal of Genetic Psychology*, Vol. LXXIV (March, 1949), pp. 61-84.



with their religious beliefs, may cause serious emotional disturbance.

### *Financial Limitations*

Gifted children in the lower socio-economic levels have to deal with financial limitations, social frustration, physical handicaps, problems resulting from broken homes, parents of much lower ability who cannot understand them. There are many able young people who cannot secure further education because they lack money for tuition or because the family needs their earnings. In the Orange, New Jersey, school system special effort was made to provide financial aid for gifted children. Scholarship funds were raised in various ways. A public-spirited citizen became interested in the Guidance Department, especially in the statement of the Director, Dr. Mary Holman, that "there is never enough money to educate the gifted child in order to prepare him for leadership in the field of his choice." This woman was successful in interesting a group of her friends in raising money for substantial scholarships for a few gifted children. The Teachers Association, the Rotary Club, the College Club, private individuals, and two foundations also gave money for this purpose. Thus one community responded to the gifted student's need for financial aid.

### *Poor Instruction in Thinking and Study Methods*

Gifted children need practice and instruction in developing their mental capacity. They need to have successful experience in seeing relations between ideas, budgeting their time, spending leisure time wisely, using the library, writing well-documented reports, "translating ideas into socially useful action," developing mature reading skills, fulfilling the obligations they accept, developing aesthetic appreciation. "Their education should pave the way for initiative, originality, and constructive endeavor."<sup>21</sup> Hollingworth suggested that gifted children should receive additional training in the psychology of thinking and in parliamentary law, and should read biographies of the builders of modern civilization. These essential types of training are often neglected. A gifted boy nineteen years old had never had any educational ex-

<sup>21</sup> William S. Gray, "Education of the Gifted Child: with Special Reference to Reading," *Elementary School Journal*, Vol. XLII (June, 1942), pp. 728-744.

perience that made him put forth optimum effort. He attended a private ultra permissive elementary school where children followed their interests and received little guidance in learning. In the public high school he attended for several years catered to the average student. It required no effort on his part to succeed. When he was transferred to a private preparatory school, he was rigidly required to spend certain hours in study halls. But here the authority was all from without, it was never translated into self-direction. In college, students were allowed to sink or swim, with very little guidance. He got in with a nonstudious group and followed the path of least resistance. Nowhere in his educational career had he learned to discipline his mind and to develop the habits of thinking and study of which he was capable.

### *A Dull and Meager Curriculum*

Maladjustment in gifted children may grow out of a curriculum that does not challenge their ability or provide education in interpersonal relations, self understanding, and family living in addition to the usual academic subjects. Richly equipped laboratories, workshops, and studios in all fields from which individual students can select, with guidance, the experiences they need would seem to offer ideal education for gifted children and young people.

Conditions fostering the optimum development of gifted children have been fully treated earlier in this book. Only by providing favorable conditions in the extremely important first years of life, and in succeeding years at home and in school and college, can we lay a sound basis for the mental health of gifted children.

### *Guidance Procedures*

Developmental guidance of the gifted follows the general pattern of effective guidance for all children.

1. Insuring early recognition and understanding of the abilities and needs of the gifted children in any group without individual publicity or embarrassment.
2. Providing the experiences in home, school and community that study of the child shows to be desirable and necessary.
3. Making connections between the resources available and the individual's needs.

was considered a "nut" and avoided by the boys. Girls were more tolerant, but he was afraid of them and avoided them. "He feared girls like the plague."

A new teacher came to the school as chairman of the social studies department. He was warned about the boy, but decided to keep an open mind. The boy interested him and he decided he would like to know him better.

He established diplomatic relations and made a friend of the boy. He did not berate him for homework undone or for sulking. Instead, he invited the boy to the beach several times, said he would not expect regular assignments of him, and asked him what he would like to do. He "wanted to make a study of the historical development of *tyranny* from medieval times." He showed the teacher a bibliography "that would have done credit to a professional historian."

Asked by the teacher to make a report to the class on a topic of interest to him, he consented. The teacher pointed out to him that since his classmates were average high school students, it would be necessary to simplify his language and ideas and bring his remarks down to their level. He rendered a brilliant report — the class broke into applause.

He now joined in classroom discussions and began reading his assignments and many other references besides.

His social studies teacher asked him to speak to the Current Problems Club on "The Origin of Tyranny in Modern Times," and invited his skeptical teachers to attend. It was a great success, his teachers were astonished, he was congratulated by his classmates and able to accept the "plaudits of the girls without becoming tongue-tied or flustered. George had found himself, and in so doing he learned that his classmates were not his enemies and his teachers were not hostile."

He started doing his school work and decided to go to college. In this case the teacher used his social studies class as an instrument of guidance.

School success or failure has an important relation to the mental health of boys and girls. Of fifty cases of bright children (IQ 120 and over) referred to the Bureau of Child Guidance, twenty were educational successes and thirty were educational failures.

The successful group was markedly sociable and outgoing. The failing group was markedly unsociable and withdrawn.<sup>23</sup>

. . .

The successful group were more responsive to treatment in the Child Guidance Bureau than those who had experienced a series of academic failures . . . The implication is that school success or failure — so far from being a purely academic affair — is part and parcel of the child's personality adjustment to life, with roots deep in the home situation. It is a symptom of that larger and more inclusive pattern, the child's total response to the world in which he lives.<sup>24</sup>

### *Special Guidance Services*

In cases in which maladjustment has gained headway, expert counseling or psychotherapy is needed. Parents, as well as children, require help in understanding themselves and their relations with others. The case of "Johnny"<sup>25</sup> illustrates the need for concerted action by home, school, and special guidance services. At six years of age, Johnny was quick tempered, quarrelsome, unkempt, and usually tardy. He would not follow directions, never finished a task he had started, and sucked and bit his finger until it became infected. When he was transferred to an understanding teacher who was able to win children's cooperation, Johnny's behavior improved and he became interested in reading. Realizing that the boy had abilities he was unable to use, the teacher referred him to the Bureau of Child Guidance. Psychological examinations showed him to be eligible for a special class for gifted children, but he was not immediately transferred because he was benefiting so much from his relations with his new teacher. At the Bureau of Child Guidance, a psychiatrist helped Johnny to overcome his jealousy of a younger brother and another expected child. A social worker helped the mother to see how her own very unhappy childhood, her overburdened married life, and her reluctance to have children had influenced her relation to Johnny. She came to appreciate the child's needs. The social worker also saw the father twice and helped him to see that his son would

<sup>23</sup> Jeannette Regensburg, *Studies of Educational Success and Failure in Supernormal Children*, Archives of Psychology, No. 129 (New York: Columbia University, 1931).

<sup>24</sup> *Ibid.*, p. 137.

<sup>25</sup> Lilian Tow, "The Case of Johnny," *Understanding the Child*, Vol. XVII (June, 1948), pp. 92-94.

- 4 Helping him to progress with satisfaction in the suitable program selected
5. Helping each child to develop a concept of his most acceptable self and his responsibility to society for his gifts
- 6 Encouraging him to move toward the goal of emotional maturity

### *Finding Their Own Solutions*

Gifted children have better than average capacity for self-analysis, they think through many of their perplexities without help from adults. One extremely nervous high school boy who, according to all appearances, gets along well with both adults and children, was disturbed about the possibility of moving again, after having recently had the problem of adjusting to a new situation. When he learned that his aunt had found a house, which she intended to buy for the family, he made the following notation:

I felt as I have felt very few times in my life. Besides being upset by the fact, I was greatly annoyed that I had not been told about it when I first asked. I felt like saying some things that I certainly should not say to my mother and father at the breakfast table. I really couldn't keep the words from coming out, but I managed to keep my parents from hearing them . . . It was one of the few times I have ever felt like kicking the chairs or anything in my way. . . . In school I managed to forget about it for a while. I'm glad to say that all through this affair my school work didn't suffer at all. When I cooled down, I was able to think clearly about the matter. I thought to myself, "I've been pretty lucky all my life. There have been very few things I wanted that I didn't get. My parents have done all they could for me. If they want a house of their own I certainly shouldn't stand in their way." . . . But when I thought further about living in the new home, I could feel the anger, the worry, the fear, or whatever you would call it, rising in me again as it did that morning when I first learned of the house.

Another high school boy gave a glimpse of his method of meeting frustrating situations that previously aroused emotional conflict.

Sometimes at home I have my heart and mind set on a definite idea or thing such as purchasing a certain item or splurging on a day out. I myself think it would be fairly simple to do, yet I meet opposition, from my mother usually. She just flatly says "no" to my plans, and I will just walk away, trying to think of something else to occupy my

mind, so as not to think of my failure in plans. A few years back I used to beg and plead for my way and, if I didn't get it, I would start to bawl and try to win a little sympathy. This usually, if not always, worked. But, now, I have sort of learned to take decisions no matter whether I like them or not.

At some times, when I thought I was alone in this world, I went to my dog and talked to him to get it out of my system. Other times I went for a long walk just to try and help clear my thinking. I especially like to walk in the rain.

It seems as though the only place I meet much opposition is at home. That is the only place I seem to mind if I do meet opposition. In the school I take things as they come because that's the way they have to be, so why not make the best of it?

I actually feel that everything in general has turned out swell for me.

### *Teacher Guidance*

Although many gifted children and young people can work out their own solutions to problems, they often feel the need of help from adults. A competent teacher-counselor can give such help at the psychological moment.

An example of guidance by the classroom teacher was reported by Margolies.<sup>22</sup> A boy, aged sixteen, in the fifth term high school, had IQ's of 148 and 152 in the fourth and sixth grades respectively and the reading score of a college graduate.

At the time of writing he had a 'string of failures' to his name. He had failed geometry twice and dropped it. German he had failed several times. His mark in both science and English was 65. He had accumulated more complaints against him than any other child in his grade.

The complaints against him were of an unusual nature. George was not noisy. He was not the ringleader of a vicious gang. He did not lie, nor cheat, nor chew gum, nor steal, nor throw blackboard erasers, nor cut up in any of the traditional ways so common to his age.

He was surly and silent, stared into space, refused to participate in class or do homework. He told teachers, when they pressed the point, "You and your homework bore me." His attitude earned him ratings of 'impertinent,' "neurotic," "lazy," "disrespectful." He was described as antisocial, having no friends. He

<sup>22</sup> Abraham Margolies, "A Portrait of George Miles — Problem Child," *High Points*, Vol. XXVIII (September, 1946), pp. 25-30.

benefit more from his father's companionship than from drill on his school work.

In the special class to which Johnny was referred, when the psychiatrist felt he was ready for it, he found a "creative outlet and incentive for a fuller use of his excellent abilities, without pressure for academic achievement for its own sake." He became skillful in wood carving and has gained satisfaction and recognition from this ability. His behavior has markedly improved. "He has come to respect himself as a person who can accomplish things on his own initiative and who is liked and accepted."<sup>26</sup>

### *Treatment in Special Schools for Exceptional Children*

A very small number of seriously disturbed bright children have been treated in special schools. The following case of a gifted nine year old boy treated at the Orthogenic School of the University of Chicago was contributed by Dr. Bruno Bettelheim, Director of the Orthogenic School.

Charles was a nine-year-old boy of superior intelligence, who was severely rejected by his mother and who turned to his father for warmth and affection. But the father, who was fond of his son, was himself a coldly intellectual person who knew of only one way to establish contact with his son, namely, through intellectual talk. Like many emotionally deprived children, Charles sought refuge in the most primitive gratification—food. By overeating to the point of obesity, he could not only provide himself with the only type of primitive gratification except sleep which was accessible to him, but could also defy and annoy his mother when she demanded that he lose weight by dieting or reducing. Moreover, by becoming so heavy that he was virtually unable to move, he could better protect himself from the impulse toward physical aggression against the mother. As long as he was unable to move he felt sure that he would not hit her or kill her. His obesity also restricted functions which were very poorly developed in him and thus tended to free additional energy for his intellectuality.

Initially he had feared (and rightly so) that to apply his intelligence to the problems that surrounded him—the deep dissensions between his parents, their unhappy marital and extra-marital relations, and his mother's hatred for him—would only

<sup>26</sup> *Ibid.*, p. 94.

increase his difficulties with his parents, his social isolation, and his fears. Since his anxiety obliged him to seek some way of relief, and since the blocking of motility as well as the inability to form relationships because of his hostile behavior precluded other ways of discharging tension, he was forced to rely on his marked intellectual abilities for taking care of all his emotional needs. More and more he applied them to the most abstract problems, all totally unrelated to the interests most normal for a child of his age. This in turn made relations to his age mates utterly impossible. On the other hand, the same abstract preoccupations were encouraged by the father and relatives and, unfortunately, by his teachers as well. Their encouragement drove him to even greater efforts in exploiting his intellect, but only in ways that did not help him to solve his immediate problems. He felt more and more discouraged, and despite an IQ of 162, was actually slow in his school work, partly because of his obsessive preoccupations and partly because of his very poor motor coordination.

This became apparent in psychological tests. His performances were outstanding when they obviously could not lead to an understanding of reality. He could apply intelligence only to areas where it led to no new comprehension of the world (repeating digits in the Stanford-Binet test, seeing in a Rorschach test unusual details which not only did not help in understanding the picture as a whole, but obviously prevented it).

At the therapeutic institution, in the security from maternal threats or the intellectual overstimulation of parents, he could slowly reveal through his comments what had happened to him. He compared himself to a powerful steam engine (his intellectual and bodily strength) which was safe only because it was strictly controlled. The engine could not deviate from the tracks which were set for it by others. In this way it was safe to go full steam ahead on the intellectual tracks laid down for him without fear that he might act of his own accord. Otherwise he might act on his hatred, and thus, with his superior intelligence, be most dangerous to the people on whom he depended — his parents.

Treatment in this and in similar cases must always concentrate on restoring the child, step by step, to developmental balance. In each case the specific course of rehabilitation will depend on the nature of the child's deprivation and the specific anxieties which



led to a total reliance on intellectual defenses. In the space here available, only one of the steps in Charles's rehabilitation can be dealt with in any detail. In his case, the dissolution of a compulsive preoccupation with steam engines (his symbol of hostility) was necessary before he could direct his intelligence to any constructive purposes. As it happened, this occurred in connection with his fear of motility. At the beginning of his rehabilitation, he found it almost impossible even to walk up an incline some five feet in height. Later he complained it was hard work, but agreed that it was probably healthy exercise which he should therefore attempt. We advised him not to try to manage the incline if it was hard work for him. We explained that exercise that was no pleasure seemed pointless, and encouraged him not to worry about his health. Later it was pointed out to him that other children seemed to enjoy running up and down the little hill; that they did it not because it was healthy or good exercise, but just for fun. Considerably later we expressed regret that he missed out on such pleasures. This idea startled him and he began to reconsider his attitude. He still expressed the fear that he might fall down; or that in running down the incline he might gather so much speed that it would carry him away and he would be powerless to stop. This fear he now connected spontaneously with his fear of what might happen if an engine did not stay on its tracks. But by this time he had established a good relationship to his counselor and did not feel very hostile to her. This counselor explained to him how engines are always stopped by buffers when their brakes do not work; she promised to stand at the bottom of the hill and if necessary to catch him like a buffer. He felt safe enough to try this with her. He ran down the hill, throwing himself with aggressiveness and tremendous force against her. Fortunately, she managed to withstand his onslaught.

It was only after this telling demonstration that there was someone to stop him even if he turned loose his aggressive motility that he was able to stop himself. For some time, however, he insisted that his counselor stand ready to catch him, to stop him if he should be unable to do so. After this experience was repeated, he began to run more freely. Soon he rolled down the hill; he ran and fell like a two-year-old. He seemed to be developing not only motor coordination, but the enjoyment of bodily movement.

Slowly, then, he arrived at the conviction that there is pleasure in bodily exercise. From rolling down the incline he proceeded to going on walks, and finally even to playing ball, but this process took more than two years.

Parallel to Charles's growing ability to control his hostility were the development of his motor coordination, his ability to play with toys, to participate in games, and finally to form pleasant relationships with others. As other gratifications became available to him, he no longer needed to resort to overeating and his weight slowly approached normal limits. Simultaneous with these developments was a decrease in his monomaniacal intellectual preoccupation and an increased application of his high intelligence to matters more closely related to the interests of his developmental age and maturity.

The final adjustment came when he began to apply his intelligence to the understanding of those problems from which he originally sought to escape: the bad relationship between his parents (the existence of which he had previously had to deny), and the normal sexual development of a preadolescent boy — a development about which his mother had created great fear. At the same time he also learned to understand and to accept as normal such bodily functions as intake, digestion, and elimination. When he understood these physiological processes, his comments revealed he had also gained insight into another cause of his overeating and his monomaniacal preoccupation with steam engines. What he had once wanted to know was how strength can be gained through the process of turning matter into energy — as symbolized for him by the burning of coal in a steam engine. After he understood that even the greatest of food intake would not have increased very much the amount of energy available to him, he was able to give up some of his overeating. This extreme case, treated intensively in a school for seriously disturbed children, illustrates the need for understanding the causes of their behavior and for providing a progression of suitable experiences leading to their rehabilitation.

#### *Various Methods of Treatment*

Seriously disturbed gifted children and adolescents may be treated by any of a number of methods, milieu therapy, play ther-

apy, counseling and psychotherapy, group therapy, psychiatry, and psychoanalysis Both successes and failures with various methods of diagnosis and therapy have been reported in the literature

For gifted children in general the most important kind of counseling is that in which gifted children and adolescents develop understanding of themselves and their relations, and a clearer idea of their most acceptable self and the ways to achieve it The counselor should encourage gifted children and young people to take as much responsibility as possible for their own guidance, and to employ the counselor as a resource and consultant only as they feel the need for adult help Through skillful "self-directive" counseling in which they consider their abilities and limitations, they may acquire a sense of social responsibility for their gifts Many gifted children flounder aimlessly because they have never gained insight into the social usefulness of their potentialities Only when the gifted child regards goals as important and worth while does he put forth effort commensurate with his ability.

## COMMUNITY RECOGNITION OF THE GIFTED

Communities mobilize their resources for many diverse purposes. Hardly a week passes without a story in a newspaper or magazine of how some community or neighborhood group has recognized a common problem and proceeded intelligently and with enthusiasm to do something about it. Money is raised to pay the debts of a local college; a depressing chain of shoddy and rubbish-filled back yards is turned into an attractive recreation area for neighborhood families; a music festival is organized; a war-ravaged European city is adopted and provided for. Drives to mark streets, decrease traffic accidents, identify people with tuberculosis, reduce noise, prevent fires, and myriad other projects bring the people of a community together in worth-while enterprises. Many of these projects have to do with the human resources of the community, with health, safety, recreation, general education; many are directed toward prevention of community ills.

Most neglected in all these projects is the rich resource of talent in the community. The gifted child is too often the neglected child. Vast in capacity for response to stimulation, he is often left to his own devices to find an outlet for his talents. His opportunities are fortuitous. He is happy indeed, and the community fortunate, if he has understanding parents who are competent to provide him with the kinds of experience he requires to bring his abilities into fruition, or if he finds some other person or activity

<sup>1</sup> The assistance of Mrs. Miriam Goldberg in some of the research for this chapter is gratefully acknowledged.

in the community responsive to his unusual needs. However, too much is at stake for the child, for the community, and indeed for the nation, to leave the matter to such chance circumstances. It seems clear that communities have a definite responsibility here and a great opportunity. The purpose of this chapter is to examine some of the causes for the neglect of the gifted child in the community, to suggest some techniques for recognizing and nourishing exceptional endowment, and to describe the programs of a few communities that have attempted to make provision for the full development of their children.

## Important Factors in Organizing Community Programs

### *The Need to Define the Problem*

Perhaps one of the most important reasons why communities have not actively engaged in projects to identify promising children and to provide stimulation for them is the failure to recognize the problem and the challenge. The problems of juvenile delinquency, traffic accidents, sanitary conditions, housing, and recreation, which most frequently provoke community action, are insistent problems with dramatic appeal. That the gifted child might be a community concern does not seem to have occurred to many community leaders. Nor have specialists, such as educators, doctors, writers, been widely aware of what needs to be done or might be done for the gifted. A glance at indexes to newspapers, periodicals, and even professional journals reveals the fact that references to the gifted child are very few. An examination of various sociological studies of communities that have been made in the past decade shows that the children of the community come in for their share of attention; the concern, however, is with reading habits, movie attendance, cliques, delinquency, "rating and dating," sexual behavior, leisure-time activities, attitudes toward parents, and so on. Not one of five of the most important and recent of such investigations mentions the gifted child in the community. Citizen and expert alike have not generally become aware of the community's significance, for good or ill, in the life of the gifted child. Perhaps the most promising contribution that this volume can make is to bring the potentialities and the pe-

cular needs of the gifted child into prominence. Clear recognition and definition of the problem may be the most crucial step in its solution. Once the challenge is clear, the ingenuity and productive potential of the community, so manifest in other enterprises, may be expected to find new ways of helping the talented child grow to full realization of his capacities.

### *The Need to Encourage Ability*

That genius will emerge in spite of difficulties and that adversity stimulates creative activity are convictions expressed by many people. Evidence presented in other chapters of this book makes clear the fallacy of this position. It is probable that adversity, lack of opportunity for exploration of interests, and inadequate training stifle ability rather than foster its expression.

On the other hand, wholesome surroundings, stimulating experience, and good emotional climates are conducive to expression and development. Despite efforts to relieve tensions and promote mental health in the gifted, these children will encounter frequent frustrations—certainly sufficient in amount to engender compensatory behavior of various kinds. It is important, however, to bear in mind that compensations for feelings of inferiority cannot be looked upon as the driving force behind many kinds of creativity. Instead, conditions which promote mental health are conducive to creative endeavor in many gifted persons.

### *The Need for Cooperation of School and Other Community Organizations*

Another reason why communities have not concerned themselves with their gifted children may be the assumption that one of the community's agencies, the school, is adequate to do all that needs to be done. A recent nationwide survey addressed to officials of schools, teacher training colleges and universities, and state departments of education reveals that these persons think of the education of the gifted child largely in terms of what can be done within the school program.<sup>2</sup> The principle that the entire community should be involved was recognized, but no specific incident of actual community involvement was described, nor

<sup>2</sup> Frank T. Wilson, "A Survey of Educational Provisions for Young Gifted Children in the United States and Studies of Problems Related Thereto," *Journal of Genetic Psychology*, Vol. LXXV (September, 1949), pp. 3-20.

in America and in *American Men of Science*.<sup>2</sup> Apparently it is not the over-all "goodness" of a community that makes it a desirable place for the growing gifted child but the special opportunities that are provided. Special opportunities for creative living are largely an expression of the interests of the adults in the community. Even within limited geographical areas, we know that some cities are noted for their music, others for their basketball teams, others for their political leadership, and so on. Such things are intangible, to be sure, and not likely to show up in a general evaluation of a city, but they are surely of tremendous importance in determining the directions that gifted children take in growing up.

### *Need of Young Gifted Children for Suitable Guidance*

To grow up in a home where there are many opportunities for exploring the world, for finding out what is fun to do, for venture-some tries at creative living, is an opportunity that every child should have. Especially are these experiences important for the child who has the ability to start from such simple beginnings and grow to the stature of leadership. Eminence that tends to run in some families may be assigned not only to the factor of inheritance but also to continued family stimulation given to the growing child. This is not to say that stimulation will make average children outstanding, nor that a home lacking in such opportunities will necessarily prevent the gifted child from finding a way of expressing himself. It would seem, however, that the best assurance a community has that its gifted children will fulfill their promise is to provide opportunities for the adults of the community to engage in activities that foster self-expression and sensitivity to the potentialities of their children. The early years in the life of the precocious child are precious ones and should not be neglected. Even before the gifted child is old enough to enter school, he may make tremendous demands for sustenance of his talent. Materials for learning are needed — books, musical instruments, paints, paper, crayons, brushes, tools, mechanical toys and gadgets — but most of all there is needed an atmosphere which fosters creativity.

The necessity for early beginnings must be kept in mind as a community plans to provide for its gifted. In his study of the one hundred most successful and the one hundred least successful of about fifteen hundred gifted children who had grown up, Terman reports that the most significant difference between the two groups was the age at which a career was chosen.<sup>4</sup> The children whose gifts came to fruition, as judged by themselves and by objective standards, were those who had made up their minds early what they wanted to do. The careers of successful professional golfers have been studied by Lehman, who reports that a "surprising number of professional golfers . . . were either born close to a golf course or served as caddies when quite young." Then he asks, "Could this early opportunity to practice golf and thus to acquire early the 'feel' of a golf club have been a crucial factor in subsequent golfing success?" Lehman also recounts the story, possibly apocryphal but certainly in line with expectation, that Henry Ford as a boy worked as an apprentice in a watch repair shop, he was so small that his employer was embarrassed to have customers see this child repairing their watches. Lehman quotes Scheinfeld's<sup>5</sup> data on age of recognition of talent among a group of noted professional musicians. The average age at which their outstanding ability was first displayed was a few months short of seven years. (With reference to the community's responsibility for the gifted, it is significant to note that these eminent performers were too young to have been much influenced by formal schooling. Opportunities for learning must be provided earlier than the school years.) The average age at which the 36 eminent instrumental performers, studied by Scheinfeld, made their professional debuts was only 13½ years! It seems clear from a study

<sup>4</sup> Lewis M. Terman and Melita H. Oden, *Genetic Studies of Genius*, Vol. IV, *The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947).

<sup>5</sup> Harvey G. Lehman, "Young Thinkers and Great Achievements," *Journal of Genetic Psychology*, Vol. LXXIV (1949), pp. 245-271. Lehman's article is a fascinating development of the thesis that outstanding early performance is characteristic of men who have made significant contributions to our culture. By way of illustration, Jane Austen wrote *Pride and Prejudice* at 21. Bryant was composing poetry at 8 and wrote "Thanatopsis" at 18. From earliest youth, Colt had been interested in firearms and at age 16 had made a model of a revolver. Galileo discovered the isochronism of the pendulum at 17. Mendelssohn completed his *Overture to A Midsummer Night's Dream* at 17½. Pascal invented a computing machine at 19. Westinghouse invented a device for replacing derailed cars at 19. Stokes at 21 published the first treatise in English on the stethoscope. Curie, Davy, Erlich, Halley, Joule, Leibig were all making contributions to science before the age of 21.



were community action programs recommended. The school is certainly one of the most important agencies for identifying the gifted child and providing experiences that will lead to an unfolding of his talents. But the school cannot do the job alone. The gifted child requires earlier nourishment for his creative potential than the school can normally give and, once the gifted child has the thrill of creative endeavor, he is likely to demand a wider range of activity than the school is equipped to supply. Community organizations must work with the school to provide richer opportunities for the gifted.

### *The Importance of Community Attitudes*

Significant factors in the development of talented children are the attitudes toward such people which are held by members of the community. These feelings are subtle and varied. Is it somehow un-American to provide special opportunities for the gifted? Are geniuses rude and unpredictable people, just a little queer? Are art, poetry, music, dramatics, the dance, literature, really practical? Isn't it a little effeminate for boys to be interested in art or music? Isn't it dangerous for a lad to be reading Schopenhauer, Darwin, Freud, Marx? These questions, frequently expressed, reveal attitudes which are largely unfavorable to the gifted child. But they are, nonetheless, decisive factors in determining a child's behavior. A boy in a slum area aspires to be a gang leader because of community approval of a notorious racketeer. A promising scholar finally accepts a family-and-community-imposed role of businessman, an activity in which he is successful but not too happy. There are certainly positive attitudes as well, attitudes which favor the development of outstanding ability. Notable among these is the pride which American communities have for their eminent men and women, once they have attained recognition. The birthplaces of Nathaniel Hawthorne and of Jesse James are pointed out, and a plaque marks the spot where Babe Ruth once knocked a ball over the fence in a game.

The attitudes of a community are varied, they are favorable to talent and unfavorable, they are sometimes consistent, sometimes contradictory, sometimes even whimsical. At all times they are important for the child who has the potentiality for great development.

### *The Social Inutility of Children*

Here is a paradox: it is generally recognized that leisure and freedom from drudgery are essential for creative work. In spite of romantic stories and a few historical instances to the contrary, the hungry man who wonders where his next meal is coming from is not likely to do significant creative work. In cultures where men drain all their energies in keeping life going, creativity languishes. In America today and in most modern countries, technological advancements have relieved man of an incessant burden of work and have made leisure abundantly available. For most workers, however, the demands of the job are increasingly stereotyped and increasingly less stimulating to creative activity. Creative activity for most adults must be developed independently of their occupation. For children, technological progress has meant an increasing social inutility. Children have become progressively isolated from the community process of creative activity. The child can seldom today serve a family apprenticeship in violin making, organ playing, tapestry weaving, silversmithing, cabinetmaking, or other activities which in the past were once a part of the process of making a living and of creative self-expression. Nor can the gifted child always find in the leisure-time activities of his family a stimulus to creative endeavor, for his father and mother and older siblings have not themselves learned to use their new-gained leisure. The void is filled with various passive entertainment activities, often of a highly synthetic nature. In spite of greatly increased opportunity for creative activity, the family may be ground most barren for seeds of greatness.

### *Effect of Community Climate*

The aspirations and values of fathers and mothers, and of the adult population in general, are exceedingly important in the life of the gifted child. We know that certain cities and states tend to produce more outstanding people than other localities. It is interesting to note that these differences cannot be accounted for by reference to many factors which ordinarily make a city desirable. In his study of 200 American cities, Thorndike found little or no relationship between the goodness of a city, as measured by his criteria, and the number of its residents listed in *Who's Who*

of the early lives of eminent men that their abilities were recognized early and that they had rich opportunities to learn at an early age. The gifted cannot wait until the school years to find stimulation and opportunities for exploration of their talents. The family and the community have the initial responsibility and challenge

### *Democratic Values and the Gifted Child*

Many worthy members of a community may be reluctant to sponsor any program that offers special opportunities to relatively few children in the community. Some basic assumptions about the functioning of a democracy are involved, and the issue must be examined with care and understanding for the point of view of those who sincerely feel that such proposals are somehow undemocratic. The issue seems to revolve around the concepts of equality and equity. The affirmation that "all men are born free and equal" embodies ideas that are at the core of our democracy. It is not a principle to be tampered with, but it is a principle that should be thoroughly understood. The psychological fact, verified again and again in experiment and in history, is that men are not equal in capacity. The glory of a democracy is that it imposes relatively few legal restraints upon the realization of capacity. There is "plenty of room at the top," and there are wide margins for expression of individuality. To develop a most vigorous democracy we must avoid the deadening mediocrity that arises when equality is interpreted to mean that people must all be alike. There are enough leveling influences in our machine-stamped, scheduled, and routinized civilization as it is without adding an ideological restriction to human development. Not only must we avoid this leveling tendency, we must actively seek full expression of the differences between people, with a deep respect for the right of people to be themselves. Full realization of the unique personality of each citizen is surely the highest aim of a democracy. Full equity in the pursuit of self-realization seems to be the profound aspiration captured in the phrase about equality in our Declaration of Independence. How to make this equity real for an important and neglected portion of the child population is the substance of this book.

It is true that there is no law against being different. But equity

is more than a legal matter. Crippling restraints which prevent a full realization of capacity are often economic, social, and personal. We will probably not pass laws against a child's becoming a great leader, painter, or architect. But we may unwittingly make it impossible for him to do so by indifference to his promise or by failure to make essential opportunities available.

### *Opportunities for Free Choice*

One final query seems important. Does a community have a right to encourage a person along a particular line of endeavor? The prediction of vocational success is difficult, and the undertaking of a specialized career as a singer, a writer, a political leader, an athlete, is hazardous business. A choice must often be made between economic security and possible success in the area of one's greatest interest and talent. One frequently finds in schools of education and other professional schools gifted students who are primarily interested in being musicians or artists and who believe that they must first establish for themselves a means of livelihood should they not be successful in the field of their most consuming interest. Such choices, it seems, must be left to the individual. The community has an obligation to recognize and encourage the gifted person, but the process must not involve pressure. To provide opportunities for free choice seems to be a guiding principle needed in any community program for the gifted.

### *Identifying the Gifted Child in the Community*

Granting that early recognition of talent is desirable, even necessary for its full development, what practical steps could be taken in a community to identify its gifted children early and to provide for them the kinds of experiences essential to the maturation of their abilities? Can the responsibility be left wholly to mothers and fathers, or must the whole community join together to make sure that no child is denied the right to find his highest level of achievement? To the latter question we have already given a partial answer: the home is the place to start, and parents should themselves have opportunities to paint, play music, read, engage in dramatics, sports, and community enterprises where leadership is needed. In this way they may gain (in addition to

satisfactions for themselves) sensitivity to creative potentiality in their children and the attitudes and skills necessary to nourish budding talent. But parents cannot bear the whole responsibility. Some parents will simply not be interested, others will be interested but will not be able to extend themselves or their resources adequately to meet the needs of the child eager for experience. The community must help. And the first question will naturally be: How can the community identify the gifted child at an early age so that no precious time will be lost in starting him on the path to full realization of his promise?

### *Identification through Performance*

The problem of identifying the gifted children in a community is a difficult one, involving matters of principle and technique. The best procedure, from both points of view, involves identification through experience. This means that the community should provide opportunities for every child to engage in some kind of activity of his own choosing which will give him an opportunity to find out if he has enduring interest in the activity and the ability to pursue it with satisfaction and possible success. In the ideal community, the range of these activities and the extent of possible development within a single activity would be great. Each child, at an early age, should have the opportunity to sample widely, to concentrate on the activity most congenial to him, and to explore the activity to the upper limits of his ability. This should be the individual's own selection, carried on in an atmosphere of understanding, with quiet encouragement for the child of unusual ability, and also with full respect and support for the child who may go only so far as to discover that he is not interested. Competition should most desirably be with the self, and the level of aspiration self-defined. In such circumstances merit would come into gradual recognition, and each step in development would be one of easy transition.

Identification and recognition through experience seem considerably more desirable than other techniques that might be employed. Extraneous considerations, such as the economic or social status of the child's family, are thus minimized in determining who can go on to richer opportunities for learning. The pres-

sure of too-sudden community recognition, with all the strenuous attendant expectations, which may result from special community "talent searches," is avoided. And perhaps most important of all, the very young child, not yet ready for school, may have an opportunity to find out his talents, an important consideration in light of the evidence revealed in studies of eminent persons.

Finally, an outstanding performance itself is one of the surest bases for predicting continued outstanding performance. Here is a child who stands with his chin barely up to the keyboard of the family piano and picks out tunes remembered from radio songs, another still in knee-pants writes a novel in English and translates it into French, another paints abstract pictures with a feeling for form and color that is truly remarkable, another builds up and catalogues a collection of birds' eggs and happily finds a museum of national importance that becomes interested in his work and encourages him to go further in his study, another reads his way through the books at home and then through those of the community library and is, at the age of 15, widely and accurately informed on maritime law. Of these children we know, because their stories appear in newspapers. How many children like them are now unknown in the communities of the world? This question should not go unanswered.

### *Identification through Tests*

Real progress has been made in recent years in developing more efficient ways of appraising ability and aptitude through the use of various kinds of tests. Tests, however, have both good and bad points, it seems important to recognize not only their value, but their limitations as well.

A most serious limitation is that tests are not very reliable at the early age levels in identifying the gifted or talented child. There are, however, many clear-cut evidences of accelerated development which the parent should observe in the gifted child. Acquaintance with the facts of child development will enable the intelligent parent to recognize and evaluate such behavior in the young child. Tests are more dependable at later ages and may be used to supplement a program of identification through experience. A limitation of aptitude tests is their relatively narrow scope.

It is commonly believed that there are tests which measure aptitudes with pinhole accuracy.<sup>6</sup> Actually, the only general aptitude that can be measured with some confidence is scholastic ability.<sup>7</sup> Tests that measure the kinds of ability needed for academic progress are fairly successful, though far from perfect. These tests are commonly called intelligence tests and are useful in identifying children of superior intelligence, since this kind of talent deserves recognition and since various abilities tend to correlate. The child with very high intelligence is somewhat more likely to be gifted in other ways than the child with low or average intelligence, the relationship, however, is certainly not high enough to warrant reliance on intelligence tests in a program which has as its goals the recognition of superior ability as described in this book.

One of the most dependable ways to measure aptitude is to test achievement, the assumption being that really outstanding achievement is a reflection not only of aptitude but also of the motivation to work, an obviously necessary factor in the realization of talent. With older children, tests of achievement may be a very effective means of identifying those who hold promise for later outstanding development. In academic areas, such tests are already highly developed and might judiciously be used as part of a program to identify children of superior talents. Several national scholarship agencies that have been active in discovering gifted children and young people have used such tests as screening devices in one phase of their program.

### Accounts of Communities That Recognize Their Gifted Children

The following accounts describe ways in which some communities have provided opportunities for children to explore various avenues of self-expression. Each endeavor is an example of the concept of recognition through experience. Every child has had an opportunity to discover his most congenial medium for self-realization and to define the level to which he may aspire. One should note that in most instances these programs have been de-

<sup>6</sup> A most frequent request in letters to a counseling center is "for the aptitude test," which, of course, is nonexistent.

<sup>7</sup> There are some tests which are useful in predicting success in a specific job, such as that of clerk, lathe operator, airplane pilot, etc., but these devices are hardly useful for the purposes here being considered.

veloped without much fanfare and often with meager financial support. They are an expression of a sincere interest in growing children, a devotion to a manner of living, and a desire to give children adequate opportunities for growth with due regard to individual differences.

### *Fostering Expression in Art — Worcester, Massachusetts*

For thirty-five years the Worcester (Massachusetts) Art Museum has offered children an opportunity to discover the satisfactions of self-expression through art. Early identification of ability and interest is possible in the nursery classes (ages 3-5), from that time on, the child who is attracted to artistic expression may be richly nourished by continued study. The initial assumption is made that "anybody can draw," an attitude which weakens the stereotype that artistic expression is possible only for the "talented." But talent, too, is allowed to emerge. "According to this system, a probationary period is offered every child, during which time ability in art can be determined. Thus no one need be denied the chance of finding out for himself whether or not he can express himself better with brush or pencil than in any other way." The child who responds may have guidance on through adolescence. By this time the classes are smaller. Many children have dropped out, some with only a hazy memory, others with a means of expression that may be enjoyed in leisure. Those remaining are students of real promise, who are likely to view their world freshly and order it with perceptive skill. This enduring effort to enrich the lives of children and to foster outstanding ability in art was financed by the community, with additional support from a foundation coming after a decade of successful work. As is so often true, much of the success of such an endeavor is attributable to individual community leaders and to teachers who recognize a need and who have the devotion and skill to do something about it.<sup>8</sup>

### *Providing Experiences in Arts and Crafts — Lawrence, Kansas*

Lawrence, Kansas, children are given opportunities during the summer to draw, paint, model in clay, weave and make mari-

<sup>8</sup> Minnie G. Levenson, *A Generation of Art Education at the Worcester Art Museum School Arts*, Vol. XLVI (1947), pp. 299-300.



onettes. About 200 children, ranging in grade levels from the kindergarten on through high school, take part in these activities. The program, which has been in effect since 1933, demonstrates what a relatively small community can accomplish with generous cooperation and fine leadership but with little money. The Children's Summer Studio was established by the Director of Elementary School Art of the city school system, with the assistance of two advanced students from the University of Kansas. The story of a community effort to provide a significant experience for its children is eloquently told in the report of the person responsible for the project: "We expected twenty-five children and got one hundred and fifty. We had \$3.25, contributed by the P T A Council, to spend. The money went for crayons and paper for children who had none. The board of education gave us a building, janitor service, and the use of equipment. . . . The next year I offered my services as director if the town would supply some money for teachers. Two hundred seventy-five dollars came in from clubs and individuals in gifts ranging from ten cents to twenty dollars. We paid six teachers thirty-five dollars each. . . . For eight years support came from Lawrence citizens, with increasing help from the schools. As a wider summer recreation program for Lawrence children grew, the Studio became a part of that program, was put under the direction of the Recreation Council, and during the past two years drew its support from a recreation fund in the Community Chest, and from the board of education." The child growing up in Lawrence will find ample opportunity to learn if he has the ability and interest to become an artist.\*

#### *Organizing a Creative Program — Bernardsville, New Jersey*

The playground set-up in Bernardsville, New Jersey, has a creative program in the several arts which provides opportunity for children to select the area in which they are most interested and to pursue their interest under guidance. At the playground, experiences in painting, crafts, music, drama, and creative writing are offered. Once a week the results of work in all these areas is

\* Maud Ellsworth, "The Children's Summer Studio," *School Arts*, Vol. XLVI (1947), pp. 303-305.

combined into some form of group presentation. The children are further stimulated by talks and exhibits by visiting adults from different countries and cultures. This plan began as a means of filling a wartime need for supervision of children during the after-school hours while their parents were occupied with defense jobs. It soon developed, however, into such a satisfying and significant experience for the children that plans were made for its continuation as an important peacetime community service.<sup>10</sup>

### *Directing a Boys' Choir — Dayton, Ohio*

The Rotary Club of Dayton, Ohio, became interested in an out-of-school Boys' Choir, gave encouragement to the Supervisor of Music in the Public Schools who had conceived the idea, and actively sponsored the venture.<sup>11</sup> The response to the first call for participants was overwhelming, and after tryouts for voice and music-reading ability one hundred boys were selected from the three hundred applicants. The group was composed of children from the elementary and high schools of the city and included young boys with unchanged voices, as well as older boys capable of singing tenor and bass. Though, at first, the older boys considered it rather beneath their dignity to be in a group with younger children, they soon were willing to accept a large share of the responsibility for the organization and maintenance of the choir. This was a community project in the truest sense. All creeds and races, all classes and occupations were represented, and the young people learned to live and work together and to appreciate one another's abilities. They also learned about music and singing and found a new creative outlet through this medium. The undertaking is an excellent example of the way in which a community can develop the creative abilities of all its children and at the same time provide opportunities for its gifted children to cultivate their unusual talents. Not the least of the opportunities provided in this particular program is the encouragement given to children who have gifts in social relationships and leadership, as well as good voices.

<sup>10</sup> Helen C. Yeagle, "This Is My Town," *Recreation*, Vol. XXXIX (1945), p. 27.

<sup>11</sup> Norman S. Park, "A Civic Project for the Supervisor," *Musical Education*, Vol. XXVI, pp. 25-36.

*Affording Opportunities in Music and Drama —  
Worcester, Massachusetts*

The Worcester (Massachusetts) Girls' Club offers an opportunity for girls to work in music and drama throughout the year. In the spring, the Girls' Club annual operetta, the culmination of several months of concentrated effort on planning, staging, costuming, and rehearsing, is presented to the members of the club and to the public. The plans for this project are carefully laid at the beginning of the school year and are the result of the combined efforts of the club director and specialists in drama, music, and dance. Parents are drawn into the program to help in adjusting, repairing, and making costumes. The children, girls aged nine to fourteen, are trained in solo and choral roles. As a rule, the soloists are chosen from the chorus of the previous year. The leading actors are chosen for musical as well as for acting ability and are usually the older girls of the group. The dancers are selected from the regular dancing groups sponsored by the club. All the girls have the opportunity to try out for the speaking and acting parts, and the most able are selected. Such experiences might well lead, for children talented in singing and acting, to a career in the theater.<sup>12</sup>

*Developing Talent in Dramatics — Palo Alto, California*

A project which gives all the children in the community a chance to take part in dramatics is maintained at the Children's Theater in Palo Alto, California. The theater, now located in its own building, puts on sixteen plays each year. Since no child may play a leading role in more than two performances in any one year, almost all the participants have the opportunity of starring as well as of familiarizing themselves with other aspects of play production, such as scenery, lighting, dancing, and choral work. Any child of the town, regardless of race or religion, is welcome to participate in the activities of the theater; it is estimated that in the fifteen years of its existence "no fewer than 10,000 children have trooped across its stage." Though the emphasis of the

<sup>12</sup> Dora E. Dulac, "An Operetta in the Making," *Recreation*, Vol. XLIII (1949), pp. 225-230.

theater is not on developing stars, but rather on fostering sound social relationships, those children who excel in their roles are selected for tours of the neighboring towns. On these tours, the young people are treated like adult actors and actresses, and are allowed to register in hotels, select their own menus, and plan their free time. The theater has become a focal point of the children's activities in Palo Alto.<sup>13</sup>

### *Promoting the Writing of Poetry — Dallas, Texas*

In Dallas, Texas, the librarian, prompted by her own love for poetry, embarked on a scheme to discover if there were children in the community interested in writing poetry. A general letter was mailed to the schools in Dallas inviting all children interested in writing poetry to bring their work to the library on Friday afternoons. Twenty-four appeared the first Friday, the average is now fifty. The children are divided into two groups: one composed of elementary school children, the other of high school children. Each youngster brings his poems to his group, reads them aloud, and takes part in the discussion that follows. The librarian guides the children by providing suitable poems for them to read and by helping them decide whether what they have written "sounds right." Annually, the children select what they consider the "best poems of the year" and make a book of them. They set up, mimeograph, and bind the book themselves. Copies are then sent to each school library and to the *Dallas Morning News* for review. Many of the children in these groups have won awards and scholarships on the basis of their poetry, numerous poems that were first read and discussed in the Friday groups later found their way into the pages of various national magazines. A number of the young people who dropped out of group meetings continued to send in their work for criticism, several of them have expressed the conviction that their enduring interest in poetry writing is a result of the stimulation they received in the Friday sessions.<sup>14</sup>

<sup>13</sup> R. Kennedy and D. H. Black, *Footlights for Small Fry* (Collier's, Vol. CXXI (1948)), pp. 54-55.

<sup>14</sup> Siddie Joe Johnson, "Library World News Aids Budding Poets," *Library Journal* Vol. LXIX (1944), p. 1054.

*Utilizing the Facilities of a Children's Museum —  
Brooklyn, New York*

The children of New York City have an unusual opportunity to learn of many things at the famous Brooklyn Children's Museum, which is now celebrating its 50th anniversary. In one recent year, more than a quarter of a million children participated in its activities. The Museum not only makes provision for exciting experiences for all the children, but it also offers the child with special interests an extensive range of experience in exploration and discovery. Here are some excerpts from a recent annual report of the Director, describing the varied activities of special interest clubs.

"The Experiment Club worked mainly in chemistry, testing different compounds such as tannin, dextrin, sodium ferrate, aluminum sulphate. A group of three boys who had an advanced working knowledge of chemistry remained after the regular meetings to study some of the principles of qualitative analysis.

"The Chemistry Club used the blowpipe and the flame test to analyze various chemicals, and studied the preparation and use of oxygen and various dyes used in the manufacture of paints.

"The Construction Club made a pinhole camera, a telegraph set, a periscope, two types of electroscopes, and a water motor.

"The Science and Physics Club studied gases, liquids and solids, and performed experiments with oxygen, hydrogen, and other chemical elements and compounds . . .

"The Photography Club covered a number of phases of photography, including developing, printing, enlarging, dodging and vignetting . . .

"The History Club proved to be so popular during 1948-49 that it became necessary to conduct it in two weekly sessions. These groups worked first in making small objects connected with the American past, such as an old pump, a ducking stool, a bornbook, a covered wagon, an oxcart. Next came a pioneer log cabin, furnished with dishes, furniture, and other household objects. In the second part of the year, the children built an early western town.

"The oldest existing club in the Museum is the Stamp Club. This group, always enthusiastic and serious in purpose, met informally through the summer of 1948 and resumed its regular

meetings in September of that year. The boys traded stamps, discussed new issues and unusual stamps, and studied papers, perforations, watermarks, and stamp design. . . .

"The Microscope Club observed and dissected dead hydrozoan polyps, beetles, praying mantises, and moths, and also observed the living organisms. They studied the size, color, movements, shape, feeding habits, and reaction to pressure.

"The Animal Club studied mammals, reptiles, birds, and insects, their habits, size, shelter, color, food, number of young, methods of protection, length of life, and strength.

"The Bird Club, which during the spring months took field trips, met regularly from October through May. This group of children became familiar with our local birds, both those that remain throughout the year and those that come in early spring. The classifications studied included shore birds, wading birds, birds of prey, pecking birds, swimming birds, diving birds, scratching birds, and perching birds.

"The children of the Marine Club applied themselves to learning about various forms of sea life. Special attention was given to the seal, his shape, size, food, and other pertinent characteristics. The oyster, clam, snails, squid, crab, guppies, horseshoe crab, and the sea lion all received the full attention of the club. A lobster was dissected and later mounted by one member of the club.

"The Nature Club concerned itself with insects, mammals, birds, and reptiles and considered their covering, size, color, food, length of life, method of movement and protection, and habitat. . . ."

In addition, the Museum sponsors a Science Story Hour for children of ages four to six and gives them opportunity to perform simple experiments. A newspaper called the *Museum Gazette* is written and illustrated entirely by the children; and a journal on stamp collecting called the *Watermark* is edited by members of the Stamp Club. Music and books also come in for their share of attention and field trips to points of scientific or social interest are taken. One of the interesting aspects of the work of the Museum grows out of its policy of permitting each child to "see, touch, and do as much as possible on a particular topic, and thus acquire a personal knowledge." The Museum serves chil-

dren from ages four to fourteen, it affords wide worlds for all children to explore to the extent of their abilities and interests. The gifted child, especially, profits from the unusual wealth of materials and activities provided by the Museum.

### Community Cooperation in the Interest of the Gifted Child

Community cooperation to promote the welfare of all children and, in so doing, to care adequately for the gifted child, is undoubtedly a goal that everyone would approve. Convinced of the desirability of doing something for the most promising children of a community, individual citizens often feel blocked by lack of an organized community program. Such programs need to be initiated.

We have no record of a community that has mobilized all its resources to promote the maximum development of its human talent. Nor is this the most appropriate place to discuss the broad and intricate problem of community organization and cooperation. However, it may be helpful at least to suggest possible procedures and to provide references to which the interested citizen can turn to obtain further information about communities in action.

#### *The Community Self survey*

One of the most interesting developments in community affairs in recent years is the community self survey.<sup>12</sup> It has been employed for the most part in getting a better picture of the community with reference to prejudice and employment opportunities. The technique is one which might lend itself most profitably to a study of the human resources of a community. Such a survey might have as its broad purpose an investigation of ways in which every member of the community could be helped in his efforts toward full self-development. The gifted child would receive an appropriate amount of attention in such an undertaking.

#### *Patterns Suggested by Other Programs*

When men began to return from World War II, many communities recognized an obligation to assist them in finding produc-

<sup>12</sup> For a full account of such a survey, see "Community Self Surveys: An Approach to Social Change," *Journal of Social Issues*, Vol. V (1949).

tivo ways of re-establishing themselves in the ongoing life of the community. While many splendid examples of constructive action in communities could be cited, the efforts of Bridgeport, Connecticut, will serve as an example.<sup>16</sup> This city mobilized its citizenry in a cooperative program involving every aspect of the community's functioning that might be of importance to the returning veteran. A central service was established and operated by a trained staff supplemented by the efforts of many volunteer workers. This distinctive program has already aided many veterans in finding employment and satisfying community activities. A comparable program might appropriately concern itself with all the human resources of the community.

### *School and Community in Action*

Another helpful suggestion comes from the Educational Policies Commission. It has become increasingly clear that the school cannot provide all the services that children need, nor can it provide all the experiences that contribute to the full development of the individual child. But, by and large, the school is the one community agency most concerned with children, and it seems fitting that the school should take the leadership in bringing together into a coordinated program the various community agencies concerned with child welfare. The Educational Policies Commission recommends that a single community board be established to administer the areas of education, recreation, and library services in the community.<sup>17</sup> In general, these cooperative efforts have been concerned with matters of health and nutrition. But the function could be extended to a mobilization of community facilities in the interest of gifted children.

### *Community Institutions*

Still another approach to the problems of a community is exemplified in the work of the W. E. Upjohn Institute for Community Research.<sup>18</sup> This group, which is financed by a grant from a

<sup>16</sup> *The Bridgeport Program for Re-employment and Veterans Affairs*, prepared by Connecticut Re-employment Commission, State Armory, Hartford, Connecticut (June, 1945).

<sup>17</sup> Educational Policies Commission, *Social Services and the Schools* (Washington, D. C. National Education Association, 1949), pp. 23-24, 66-67.

<sup>18</sup> Further information about the organization and work of this group may be obtained from the Director of the W. E. Upjohn Institute for Community Research, Kalamazoo, Michigan.



leading citizen of Kalamazoo, Michigan, is concerned with "research into the causes and effects of unemployment and measures for the alleviation of unemployment." It has a permanent staff of social scientists who plan and carry out long-range studies bearing on the special purpose for which the group was established, and who work cooperatively with any community business or agency interested in similar problems. Such a pattern for research and action could well be adapted to the problem of assaying the abilities of the people of a community and of studying ways of insuring maximum expression of those abilities. Perhaps no greater legacy could be left to a community than provision for a program that would result in continual enrichment of the community through the fullest development of the talents of all its citizens.

### Notional Programs

Finally, some note should be taken of the possibility of a national program for recognizing the distinctive contributions that individuals can make to our society and establishing opportunities for full individual development. The pattern was set in the rosters of scientific and otherwise specialized personnel which were compiled during the war to utilize the creative contributions of those people with special abilities. It has been suggested that such a plan should be in continuous operation, that it should be extended downward in age to include young people of promise, and that it should involve not only the public utilization of talents already developed, but also provision for the development and use of special abilities.

It seems clear that various provisions for the gifted must be made. The efforts of a single interested citizen in a community would certainly not be wasted. Small groups, such as special interest clubs, can make their contribution, even if there is only one such activity in the community. A coordinated community program, planned with sufficient breadth to make possible the greatest growth of all persons in the community, is needed in every locality. These local activities could become parts of even larger programs, spreading across the nation and opening, for all citizens, pathways to greater self realization and social service.

## NATURE AND EXTENT OF EDUCATIONAL PROVISIONS FOR THE GIFTED PUPIL

This chapter represents an attempt to describe provisions for the education of the gifted child. The first part of the chapter presents condensations of recent articles portraying practices in the elementary school, and the second part sets forth the results of several surveys.

In an effort to ascertain the amount of attention directed to the gifted, Mildred Mills, a graduate student at Northwestern University, consulted the *Educational Index* to discover the number of articles on gifted children listed for the years 1929-48.

She found that the peak of interest in gifted children as reflected in the number of articles published was during the years 1939-42. Interest lagged throughout the period of World War II, and a rather consistent average was reached in the years directly following.

When one examines the treatment accorded the gifted in the professional literature of education, he finds confirmation for Mills's results. Particularly noticeable is the infrequent discussion of the gifted in professional books published in the years immediately following World War II. However, since the appearance of Terman and Oden's book, *The Gifted Child Grows Up*,<sup>2</sup> a

<sup>1</sup> In cooperation with Pauline Williamson, Elise Martens, Ann Coomer, and Mildred Mills.

<sup>2</sup> Lewis M. Terman and Melita H. Oden, *Genetic Studies of Genius*, Vol. IV, *The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947).

renewed interest in the gifted has been apparent. Publication of articles, too, has been stimulated by organizations such as the American Association for Gifted Children. Presentation by the Educational Policies Commission of *The Education of the Gifted*,<sup>3</sup> at the 1950 meeting of the National Education Association in St. Louis, is another indication of the current awakening of interest in the gifted.

After a careful study of recently published articles on the gifted, several were selected to illustrate practices in both the elementary and the secondary school. Short summaries of these articles are given in the first part of this chapter. A comprehensive bibliography, Chapter Fifteen, contains additional references to recent contributions in this field. Included in the first part of the present chapter are a description of some aspects of the program in a school for gifted children and a report on an experiment which aimed to evaluate the merits of special classes for the gifted.

The articles describing practices in the elementary school contain little that is novel, while those dealing with the secondary school reveal more frequent use of enriched curricula by regular classroom teachers as well as a greater interest in the establishment of special groups, "honor classes," and "honor schools."

The second part of this chapter contains brief summaries of several surveys of school practice. In the first survey the opinions of educators in colleges and universities were sought. The second aimed to ascertain the nature and extent of provision for gifted children in Ohio. Summaries of other studies recently completed at Northwestern University offer an overview of prevailing practices in the elementary and in the secondary schools throughout the United States.

### Reports on Provisions for the Gifted in the Elementary School

Recently published accounts stress the following practices in caring for the gifted pupil in the elementary school: (a) acceleration or grade skipping, (b) enrichment, (c) individualized instruction.

<sup>3</sup> Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators: *Education of the Gifted* (Washington, D.C.: National Education Association, 1950).

tion, (d) special classes, and (e) the use of extracurricular activities

The relative merits of acceleration and enrichment are contrasted by Harry J Baker, who also presents some aspects of the Detroit program for the gifted.<sup>4</sup> J W Trusler recommends acceleration in moderate degree for pupils of IQ 125 and above.<sup>5</sup> This recommendation seems to be in accord with suggestions repeatedly made during the past decade. Several studies show that acceleration up to two full grades is not associated with undesirable adjustment in the gifted. Most authorities recommend, however, acceleration *plus* enrichment of the curriculum.

Enriched programs are reported in several studies. Roberta Kellogg cites the responsibility of the elementary school to provide special educational opportunities and recommends leadership training for the gifted.<sup>6</sup> Stimulating and guiding the reading activities of superior pupils are ways suggested by Grace A. Granger to enrich the curriculum in the primary grades.<sup>7</sup> Elsie W. Adams centers her discussion on the needs of middle and upper grade children. She calls attention to the desirability of extending and enriching the gifted child's reading to promote personal and social adjustment.<sup>8</sup> Several other articles emphasize the desirability of enriching the curriculum for the gifted in every subject area through more widespread use of (a) child study techniques, (b) diversified materials and experience, and (c) comprehensive guidance and appraisal techniques. Extracurricular activities and clubs are also recommended.

Several good reasons for establishing classes for the gifted ap-

<sup>4</sup> Harry J Baker, 'Characteristics of Superior Learners and the Relative Merits of Programs of Enrichment and Acceleration for Them,' Supplementary Educational Monographs, No. 69, *Classroom Techniques in Improving Reading* (Chicago: University of Chicago Press, 1949), pp. 153-157.

<sup>5</sup> J W Trusler, 'Pupil Acceleration in the Elementary Schools,' *Grade Teacher*, Vol. LXVII (October, 1949), pp. 16-17, 96-98.

<sup>6</sup> Roberta Kellogg, 'Skills Instruction for the Gifted Child in the Regular Classroom,' *National Elementary Principal*, Vol. XXIX (December, 1949), pp. 37-40.

<sup>7</sup> Grace A. Granger, 'Techniques in Stimulating and Guiding the Reading Activities of Superior Learners in the Primary Grades,' Supplementary Educational Monographs, No. 69, *Classroom Techniques in Improving Reading* (Chicago: University of Chicago Press, 1949), pp. 158-162.

<sup>8</sup> Elsie W. Adams, 'Techniques in Stimulating and Guiding the Reading Activities of Superior Learners in the Middle and Upper Grades,' Supplementary Educational Monographs, No. 69, *Classroom Techniques in Improving Reading* (Chicago: University of Chicago Press, 1949), pp. 162-171.

pear in an article prepared by a psychologist.<sup>9</sup> Carlson advocates special class placement for the bright child in order to bring about better self realization and self-evaluation. She suggests that the gifted child be permitted to learn basic materials rapidly for, if he is held back, his "inherent pattern and rhythm" are disturbed, and personality problems develop. The bright child should be encouraged to learn at his own rate. Nevertheless, he should remain in school the same number of years as other children, but should be offered individually challenging experiences. Carlson concludes that such a program helps the gifted child to make desirable social adjustments. She cites case studies to demonstrate that smugness, feelings of superiority, and other undesirable characteristics are alleviated when bright children are placed in classes with their intellectual peers.

Marion V. Brown also reports favorable results obtained in a class for the gifted. The pupils stayed with this teacher throughout the last two years of the elementary grades.<sup>10</sup> They were chosen on the basis of intelligence tests, school records, and teachers' recommendations. Their academic attainment was consistently superior. They scored approximately two grades above the city wide average on a reading test. Their arithmetic attainment was also superior. Not only had the pupils made rapid academic progress, but they had enjoyed many desirable social experiences. Brown adds, however, that the school cannot take all the credit for the apparently successful adjustment of these children, since they came from good homes that cooperated with the school. Moreover, these pupils read widely and participated frequently in clubs and other extracurricular activities.

Florence Brunbaugh describes the work of the Hunter College Elementary School, a laboratory school for gifted pupils between the ages of three and eleven years.<sup>11</sup> An enriched curriculum rather than an accelerated program is planned in this school.

Each teacher's program includes one free day every week, since teachers are encouraged to arrange weekly excursions. Parents, also, take small groups during school hours to places of interest, such as printing shops, leather factories, and newspaper offices. Many other activities reflect the cooperative endeavor of parents and teachers. Thus, a generally enriched and varied program of instruction offers unusual opportunities for the several hundred children of high IQ's enrolled in this school.

In a Ph D dissertation, William P. Schwartz reports a study of the relative progress made by two groups of bright children: one group taught in special classes, the other group in regular classes.<sup>12</sup> The experimental group was selected from an elementary school having special classes for the gifted. The control group was chosen from two elementary schools which were carrying on an activity program, from two elementary schools following a traditional program, and from two junior high schools.

The two groups, experimental and control, were equated on the following bases: grade, intelligence quotient, chronological age, sex, and socio-economic background. At the end of a four months' interval, the gifted group excelled consistently in all grades. This group was also superior to the control group in personality traits. Schwartz concludes:

The real purpose of the special class seems to lie in the assignment of tasks which challenge the child's interests and capacity, the enrichment of the curriculum to include a wide variety of experiences which are not possible in a regular class: the opportunity to think and to discuss with other children of equal ability the problems of life within their grasp; the development of initiative and independence of thought; and last, but not least, the realization of responsibility to the community, looking toward the use of their powers for the benefit of mankind.

The foregoing accounts are representative of recently published reports upon the gifted child in the elementary school. Provisions are varied and frequently limited in scope. Moreover, very few pupils appear to be cared for by the combined efforts of teachers and administrators in offering acceleration, enrichment, and classes or schools for the gifted.

<sup>12</sup> William P. Schwartz, *The Effect of Homogeneous Classification on the Scholastic Achievement and Personality Development of Gifted Pupils in the Elementary and Junior High Schools*. Doctoral dissertation, New York University, 1943. A similar position is set forth by Hedwig O. Fregler, "The Gifted Society's Neglected Assets," *Clearing House*, Vol. XXIV (November, 1946) pp. 141-145.

## Secondary School Provisions for the Gifted

The following accounts describe some notable efforts to provide more appropriate and challenging opportunities for the gifted pupils in the high school. L. J. Fledner, of the James Monroe High School in New York City, describes "honor classes," for which pupils are selected according to ability as indicated by previous school record, IQ, and achievement on tests<sup>13</sup>

A number of questions are raised and answered by this writer. In reply to the question "How much work should teachers expect from honor-school pupils?" he states.

The answer to this question must of necessity depend upon the guiding philosophy of the honor school. To keep the achievement quotient of these students high we should expect them to do more than the students in nonhonor school classes. This increased achievement may be intensive or extensive in nature. They may be expected to know more about the same syllabus content, or through the medium of projects, visits, directed reading, etc., go beyond the limits of the syllabus to increase the scope of their knowledge of the subject.

In answer to the question which prompted his article, "Are the differences in ability reflected in the achievement of these pupils in subject areas?" Fledner replies "Definitely, yes." This answer was based on the results of his own experiences with chemistry classes.

Another writer sought an answer to the question. "What types of classes may be found in the vocational high school for the exceptional children?" Turofsky writes

Classes in journalism, creative writing, radio script writing, public speaking, dramatics and radio broadcasting in lieu of the conventional English course. In lieu of the standard history or social studies course, the supervisor may program a class in "Current Problems" or "World Affairs" for those capable of successfully participating in such a course.<sup>14</sup>

This writer points out that there is ample opportunity to provide for individual differences in shop subjects. He cites as examples advanced courses in television and in electronics. How-

<sup>13</sup> L. J. Fledner, "A Comparison of an Honor School Class and a Regular Class in Chemistry," *High Points*, Vol. XXVIII (November, 1946), pp. 67-70.

<sup>14</sup> Isaac Turofsky, "Classes for Superior Children in the Vocational High School," *High Points*, Vol. XXXI (January, 1949), pp. 27-33.

ever, he indicates that it is desirable for teachers to devise enriched courses of study including trips, visits, outside speakers, committee work, and individual research. He warns that "it is a serious pedagogical omission to allow the superior student to do only enough in the schools to get by," for this type of student "can be utilized as a force for good in the entire school." If gifted pupils are to develop effectively, they must participate in a school program offering effective counseling, guidance, and follow-up services.

In "Educating Superior Students," David H. Moskowitz makes a plea for honor schools whose organization is based upon the recognition of general superiority. He concedes that small high schools may have to resort to honor classes.

The "honor" school organization based upon the principle of general ability provides for continuity, total curricular modification and enrichment, the determination of unified, cumulative, long range objectives, encourages correlation and integrative experiences by cooperative effort, stimulates continuous reevaluation, and affords administrative flexibility for independent work.<sup>15</sup>

Mary Albers and May V. Seagoe, in an article, "Enrichment for Superior Students in Algebra Classes," maintain that

The best interests of democracy demand that . . . superior children shall not merely shorten their stay in school but should have a broader experience while there. From a practical point of view it will fall to the regular teacher in the regular class to provide it.<sup>16</sup>

These writers describe an experiment carried on for eighty days. Since they were unable to find prepared materials that would serve as enrichment units they developed their own materials. Part I of the enrichment unit presents "the meaning of mathematics and the part it has played and is playing in making our lives what they are today." Part II deals with "facts about the Hindu-Arabic number system and many symbols used in algebra." Part III describes "men who pioneered with revolutionary ideas that have led to the present 'Golden Age' of science and mathematics." Efficient work, the saving of time, and a high degree of

<sup>15</sup> David H. Moskowitz, "Educating Superior Students," *High Points*, Vol. XXVIII (June, 1946), pp. 5-9.

<sup>16</sup> Mary Albers and May V. Seagoe, "Enrichment for Superior Students in Algebra Classes," *Journal of Educational Research*, Vol. XL (March, 1947), pp. 487-495.



motivation characterized this experiment. Moreover, the reactions of the pupils to the value of the program were generally favorable.

Asenath M. Mosso reports on "A Seminar for Superior High School Seniors" which was developed in the Sewanhaka High School in Floral Park, New York.<sup>17</sup>

After a year of planning by faculty members, the seminar was introduced to the high school pupils. The first seminar was composed of twelve superior pupils who met once a week. The meetings were devoted to planning of projects, exchange of ideas, and evaluation. Various members of the faculty met with the students. The students decided to study topics such as "A Comparison of Education in Germany and the United States from 1850," "American History as Seen through Literature," and "United States Wars." At the end of the first school year, the faculty evaluated the results, and concluded that the experiment had been successful. Later the students were interviewed. Most of them reported that the experience had been worth while.

An "English Honor Society" is described by Grace O. Clayton of the English Department of Roxboro, North Carolina.<sup>18</sup> The Honor Society proved an effective way of promoting the growth of gifted high school pupils. Under this plan, selected students were encouraged to mark papers, seek additional relevant information on various topics, and engage in creative writing.

Several writers emphasize the value of special classes in leading gifted pupils to better self-realization. William Berman describes some results obtained in a course designed "to help students determine their aptness for creative investigation and to accelerate the induction of gifted students in the field of research."<sup>19</sup> This class in Experimental Biology was divided into special groups for weekly conferences. Since much of the work was individualized, the teacher became well acquainted with each student and was able to encourage self-realization on the part of a number of youthful scientists.

Although the following comments appeared more than a decade ago in an article about the gifted pupil in the high school, they reflect the attitude of many other teachers of gifted pupils. Hazel Taylor, a teacher in a Philadelphia high school, tells of her experience in 'Teaching the High IQs' <sup>20</sup> At first the pupils preferred to be taught in the usual way — five pages of study every night and a recitation the next day. But they soon learned in a special class to work independently. They mastered the "essentials" quickly and engaged in wide reading and stimulating discussions which the teacher shared.

The flavor of an advanced class is something quite distinctive, almost heady at times. There is a vigor of mind and body that is exhilarating even if definitely fatiguing. Frankly, they are noisy, very noisy. I suppose one reason they talk so much is that they have so much to say. At any rate, they say it. There is this, however, in their favor: that when they do settle down their attention is just as profound as their disorder was. There is a depth to them, a third dimension that reveals all sorts of amazing originalities. The slow children, by contrast, present a flat surface, sometimes placid, frequently transparent, but never profound.

One of their delightful characteristics is a sense of humor. It differs definitely from that of slow youngsters. Slapstick comedy makes no appeal. They enjoy humor with an intellectual flavor, but there is no question about their enjoyment. My present secretary writes the minutes in a different form each day. One day it was in verse, another in a series of news flashes. One day after a particularly heated discussion, it appeared as a report of a prize fight, round by round.

*The foregoing examples illustrate provisions for the gifted high school pupil by acceleration, enrichment, special classes, "honor classes" or "honor schools," extracurricular activities, and clubs. These accounts make clear that high schools are increasing their efforts to provide more suitable educational opportunities for the gifted. However, the procedures reflect a variety of points of view concerning the nature and needs of gifted pupils.*

### Recent Studies and Surveys of Educational Practices for the Gifted

During the past five years several surveys have been made to disclose the extent and nature of educational provisions for the gifted.

<sup>20</sup> Hazel Taylor, 'Teaching the High IQs,' *Social Education*, Vol. III (February, 1939), pp. 111-114.

### *A Survey of Practice and Theory in Colleges and Universities*

In the spring of 1948 a study of the educational provisions for young gifted children was made by Frank T. Wilsoo.<sup>21</sup> A brief questionnaire was sent to colleges and universities which offer courses in teacher education, to more than one hundred large cities, and to all state departments of education. The following questions were submitted:

1. What special provisions are made for gifted children in your school? Please describe them briefly.
2. What experimental, or experiential, studies of these children have recently been made, or are now being made, in your school? Please state the general nature of such studies, or give references to any published or otherwise available reports of them. If convenient, kindly send copies of such reports.
3. What special studies of children of this nature would it now be worth undertaking if it were practical to do so?
4. What seems to you to be the main problems in the education of young children of superior mental ability?

This writer points out that few educators appear to have been greatly influenced by the scientific studies of the gifted. Most respondents indicated that little attention was devoted to the education of gifted children. However, several cities reported the successful operation of special classes for gifted pupils — the XYZ divisions in Detroit, the Opportunity Rooms of Los Angeles, the honor classes for intellectually gifted children in New York City, and the Major Work Classes of Cleveland.

Wilson concludes that, among educators and teachers, "there is a strongly felt need for (a) curricular materials and procedures, primarily for enrichment in regular classes, (b) trained teachers, who understand the nature and needs of gifted children, and (c) more information about the nature of gifted children."

An interesting study of practices in Ohio was reported by Edna R. Oswalt at a conference on superior children held at Kent State University, April 29, 1950.<sup>22</sup> A letter and a questionnaire

were sent by Frances Lowell to superintendents in 288 cities, counties, and "exempted villages" Replies were received from 258, who reported as follows.

- 2 per cent have special classes for the gifted
- 9 per cent provide enrichment programs
- 71 per cent are interested in the gifted but are limited by inadequate facilities
- 18 per cent make no provision for the gifted

Cleveland is reported to be the only city in Ohio having special classes for the gifted However, in several Ohio cities, teachers attempt in regular elementary school classes to offer enriched opportunities. Special classes for junior and senior high school students are found in Bellaire, Cincinnati, Newark, and Sandusky Children in Bellaire are placed in three groups according to test results and other data Cincinnati offers special college preparatory work for high school students, Newark provides special courses as electives, and Sandusky offers an enriched curriculum for the upper 20 per cent of the pupils in grades 7 to 10

The contributions of the Major Work Classes of Cleveland are already well known to students of education In April, 1940, 587 pupils were enrolled in these classes in elementary schools, 662 in junior high schools, and 459 in senior high schools The IQ required for enrollment was 125 and above

Charles H Lake, former superintendent of schools, wrote the foreword to a booklet entitled *Major Work Classes*, from which the following passages are quoted

Through its Major Work Classes, Cleveland attempts to meet the specific needs of the bright child The bright child masters the essentials of the regular curriculum in a shorter period of time than is usually allotted, therefore, he needs such additional activities as will encourage wholesome mental, physical, emotional, and social development He needs challenging work in order to derive satisfaction from the accomplishment of it and in order that he may develop good study habits

In the Major Work Classes, where education is tailored to fit the needs of the mentally superior child, an enriched curriculum is provided Among the objectives in these classes are

- 1 Increasing the range of knowledge and skills of the students
- 2 Developing alertness
- 3 Developing initiative and creative power

- 4 Developing an attitude of critical thinking
5. Developing power to work independently, to plan, to execute, and to judge
- 6 Developing increased ability to share in undertakings
- 7 Developing leadership

Though these children are segregated, they are by no means isolated from the rest of the school's program and activities. Contacts with the other children are constantly being made through clubs, gymnasium, chorus work, orchestra, and playground.

Enrichment is the keynote on which Major Work Class education is built. This means that the pupils accomplish more than the pupils in regular classes. Because of their ability to learn more quickly, they branch out on a richer program of work suitable to their ages and interests, but not encroaching upon the work of grades beyond. Such enrichment is brought about by opportunities provided for worthwhile activities and experiences, and by the methods of instruction. Among these opportunities are special instruction in art, intensive work in language and literature, typewriting, writing and producing plays, making reports to the class, reviewing books, and writing stories, articles, and editorials for school newspapers.

French is also studied. Beginning as early as the primary grades, these children, through games, songs, and dramatizations, secure a foundation for the more formal study of French in the junior and senior high schools. . . .

The work is planned in large units, a suitable method for these children because of their longer interest span. The social studies, literature, and group projects lend themselves well to this procedure. Usually arithmetic, in which pupils progress at varying rates of speed, is done on an individual basis. Drill is used when needed, though, on the whole, less is required than in the average classroom. Tests of various kinds are frequently used to measure progress. Independent study is required and help is not given until needed. Such measures as these are used in order to throw these children upon their own resources and develop self reliance.

Besides participating in group activities, each pupil has the experience of carrying on a piece of work (resembling research) along some line of his own special interest. This is finally presented to the class and is discussed and evaluated by the group.

### *Survey of Elementary School Practice*

To discover prevailing practices in the education of the gifted child in the elementary school, Mildred Mills wrote to officials in thirty nine city school systems that were recommended to her or were cited for constructive work in the professional literature of

education In the inquiry, conducted in 1948, she requested that a representative of each school system check one of three entries.

We have not given attention to gifted children

We discontinued giving special attention to gifted children

We are giving special attention to gifted children

Under the last entry, five additional items were listed "Enrichment Program," "Complete Segregation," "Segregation for Some Classes Only," "Extra Work," and "Acceleration"

Thirty-three responses were received Six reported that provisions for the gifted had been discontinued In the twenty-seven remaining cities, the following practices were cited

Enrichment	7
Enrichment and extra work	6
Enrichment, some segregation, extra work, and limited acceleration	3
Enrichment and some segregation	3
Complete segregation	2
General enrichment, extra work, and acceleration	2
Enrichment, some segregation, and acceleration	1
Enrichment, some segregation, and extra work	1
Segregation and extra work	1
Enrichment and acceleration	1

The largest numbers of cities were reported in California, Iowa, Illinois, New York, Michigan, and Washington The twenty seven cities were distributed throughout eleven states

Description of the work being carried on in Baltimore, Detroit, Los Angeles, and Cleveland was obtained from correspondence or from published sources A rather detailed account of the program in Cleveland has already been given in this chapter Cleveland is one of the few cities in the United States offering a comprehensive program for the gifted In other cities, acceleration and enrichment programs appear sporadically throughout the schools

Enrichment programs were incompletely described in most of the letters The following is an example of a report from a respondent who checked "Enrichment"

In our primary school children who are most ready for beginning reading go into books as soon as the teacher feels they are ready From then they move along at their own pace In the intermediate and upper grades, through unit approach or reading around a center of interest,

- 4 Developing an attitude of critical thinking
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boys and girls with high intelligence are able to contribute to group discussion and to the solution of problems from materials which are at their particular level.

No more clear are some accounts submitted by school officials who checked "Acceleration" and "Enrichment." A respondent from one city writes that an enrichment program is designed by the individual teacher with the help of the psychologist. A gifted child may be accelerated if his physical and emotional development are satisfactory. He is then placed under the regular classroom teacher, who "enriches the curriculum for him."

Six school systems checked "Enrichment" and "Extra Work." One described the "Extra Work" as follows:

While classwork is going on, those children particularly capable in writing, edit and write articles for the school newspaper. Those talented in art, work at the mimeoscope machines, others type and count articles. All work is original. A music program has been set up by the school and those children who are especially interested in music take lessons during school hours. Artistically inclined children have been working on permanent wall murals in the halls of the building. We have found that these children who are trained to work on the paper and extra activities are very capable of working by and for themselves. If they are out of the room working on some project, they feel their own responsibility in finding out what went on while they were out of the room. They also become quite adept at doing several things at one time. Children enjoy working on their own — having responsibility.

The respondent from another city described the provisions for the gifted in this way:

We have planned through enrichment, primarily, to take care of gifted children. In our schools we have well-equipped arts and crafts rooms, libraries, home economics and industrial arts rooms. We have placed a great deal of emphasis upon science and are well equipped with science materials. Our multipurpose rooms — playrooms and auditoriums — provide opportunities for creative dramatics and rhythms.

Other respondents indicated that they were employing various combinations of enrichment, acceleration, extra work, and segregation. The following comments illustrate the variations in practice found within these cities:

In general, we have discontinued a rather well-defined program of acceleration for gifted children at the elementary level. This program consisted of identifying, by the beginning of the second grade, chil-

dren whose native intelligence and achievement were sufficiently high to permit a program of acceleration. These children were kept together as a class completing the work of the second and third grades in a year and a half and gaining another half year in the intermediate grades, usually at the fifth grade level, by similar acceleration of the program. Because the acceleration of these children resulted in their acquiring the reputation of being a select group, which had some unfavorable social connotations, and because the children sometimes reached the secondary program while still socially immature, the organized program of acceleration has been discontinued. In general, however, at the elementary level the enrichment program is the means through which we usually challenge our intellectually superior children. At the junior high school level we still continue a program of acceleration for superior children through which they do the work of the three junior high school grades in two and one half years. This latter program has been in operation in Baltimore for about forty years, having been, I believe, one of the first attempts nationally to meet the needs of superior pupils.

The foregoing accounts illustrate the variability in the provisions for the gifted child in the elementary school, and reveal a great need for more consistent practices and more comprehensive programs.

#### *Provisions for the Gifted — Reports of State Departments*

In 1947, S. G. Santayana stated that only four states — California, Wisconsin, Oregon, and Pennsylvania — had established some degree of legislative authority for organizing special classes for the mentally gifted, and that only two states had provided financial aid. He concluded, "Not more than thirty or forty school systems are giving any special recognition to the gifted child beyond permitting an accelerated progress through the medium of special promotion or 'skipping'."<sup>23</sup>

An attempt was made by Mildred Mills in 1948 to obtain additional information. Letters containing inquiries concerning provisions for the gifted were addressed to the officials of state departments of education. Answers were received from forty-eight states. Six state departments indicated that some type of provision is being made for the gifted. Two other states reported that the gifted are to come under their supervision in the future.

<sup>23</sup> S. George Santayana, "The Intellectually Gifted Child," *Clearing House*, Vol. XXI (January 1947), pp. 259-267.

In Montana and Pennsylvania, the legal provisions for exceptional children are interpreted as including superior children as well as other types of exceptional children. Montana, however, cannot make use of this law, since "provision was not made for an appropriation for a supervisor of exceptional children."

Most of the respondents expressed interest in the education of the gifted pupil, but pointed out that little is being accomplished at the present time. A few letters include the opinion that the needs of gifted children are best cared for in regular classrooms. For example, officials in the Department of Public Instruction in North Carolina wrote:

While North Carolina recognizes the need for developing experiences and activities designed to challenge exceptionally capable children, very little in this direction has been attempted on a state-wide basis. It is our feeling that exceptional children should generally remain in classroom groups, with special effort being made to present challenging experiences in the form of an enriched curriculum which would provide a greater variety of experience in science, social studies, art, music, and reading, with individual work in all of these areas being encouraged.

Other respondents indicated a strong interest in doing more effective work with the gifted. For example, this response came from Connecticut:

We have done considerable work with the physically handicapped and with the mentally handicapped, but it has been much harder to get under way on the problems of the gifted. We are at present just at the beginning stages of case location. . . . In just one or two instances we have some special plans for children with considerable mental ability and talent, but these are in small communities and I feel as yet our efforts are only sporadic.

Virginia sent a copy of a bulletin<sup>24</sup> which contains a discussion of the education of gifted children. Since Virginia is predominantly a rural state, she cannot utilize the types of programs for gifted children that have been developed for large urban centers. Moreover, teachers must rely upon observations of the gifted child's classroom behavior in judging the extent of his superiority. Rural Virginia does not have trained psychologists to administer tests. An enriched program in a regular grade group is recom-

<sup>24</sup> State Board of Education, Vol. XXIV (August, 1911), Virginia: State Department of Education, Part III, *Special Education*, Chapter IX.

mended as the most promising and democratic practice in dealing with the gifted

A letter from Delaware contained the statement that no provision is made at the present time for gifted children, but that gifted children are to come under 'our supervision next year' New Mexico also reported that consideration is being given to the education of the gifted "in the new curriculum being prepared this summer"

The foregoing responses disclose a variety of practices among state departments of education It is heartening to observe that a number of these departments express interest in the education of the gifted and that some are starting programs for these children However, the reader must be impressed by the meagerness of these offerings

After examining the responses from cities and states, it is at once clear that provisions for superior children vary greatly and are in general woefully inadequate

### *Survey of Practices in Secondary Schools*

An attempt was made to obtain additional information concerning practices in high schools Questionnaires were sent by the writer in the spring of 1949 to school administrators in fifty-six towns and cities in the United States<sup>25</sup> Twenty nine questionnaires were returned The questionnaires contained thirty eight *items of inquiry concerning special provisions for identifying and educating superior children* The replies to these inquiries may be summarized as follows

#### *1 Identification of Gifted Pupils*

Twenty five educators indicated that they differentiated between pupils of high intellectual capacity and those who are talented in music, art, or other fields

Methods of identifying the intellectually gifted pupils were reported in the following order ratings on intelligence tests, results of standardized achievement tests, teachers' estimates of students' ability, observation of emotional stability and social maturity, marks on report cards, and age grade status Seldom is an IQ

<sup>25</sup> The names were obtained from a list of persons to whom acknowledgment was made in *High School Methods with Superior Students* National Education Association Research Bulletin Vol XLX (September 1941)

used as the sole criterion for selecting the gifted. The most favored means is a combined rating based on mental and educational tests, and teachers' judgment.

## 2. *Acceleration and Enrichment*

Acceleration is infrequently employed as a method of meeting the needs of the gifted. Only seven respondents stated that they accelerate superior students; in these cases, the amount of acceleration is limited to one or two years.

Twenty-eight schools provide some form of enrichment for superior pupils. The kinds of enrichment varied widely, including research, seminar projects, and extensive reading or study. Schools that provide special classes for the gifted mention the use of original and creative activities. A greater variety of materials and equipment is found in the classes for the gifted. Excursions, trips, and extracurricular activities are also provided for special class pupils. In nineteen schools, the time saved by individualizing "the essentials" or skills is employed on projects of various kinds. One or more schools reported offering opportunities for advanced study of French, science, social studies, and mathematics.

## 3. *Scholarships and University Contacts*

Twenty-one of the twenty-nine schools help superior students obtain scholarships. This help is provided through the services of counselors and psychologists.

Six schools reported that arrangements are made with colleges and universities either to admit the gifted student before graduation from high school or to give him advanced standing in subjects in which he has already demonstrated competency.

Four schools make provisions for talented students to attend a school that offers work in music or art.

## 4. *Homogeneous Grouping and Other Administrative Procedures*

Thirteen schools practice ability grouping. The number of the groups and the methods of grouping vary. Some schools have only two ability groups including the upper half and the lower half of the student body. One school reported that pupils were grouped "by subject and not horizontally by class."

Eight schools provide "parallel curricula" for the superior, the average, and the slow groups of students. Eight report that they plan course sequences to meet the needs and interests of the different groups of students.

Three schools encourage gifted students to remain in special classes throughout their high school careers. Nine others permit the student to stay in special classes in particular subjects only.

#### 5. *Electives and Special Opportunities*

Nineteen respondents stated that their schools offer a variety of electives suitable for the all-round development of the superior student. Such courses offer opportunities for the pupils of special ability or talent to make continuous progress.

Thirteen schools offer unusual library or laboratory facilities for gifted pupils. These provisions include: permanent library passes, opportunities to serve as assistants in laboratories, freedom to do research, and rich and varied assortments of books in regular classrooms.

The majority of the schools provide opportunities for exhibits of the science and art products of gifted students. However, the displays are not limited to the products of gifted pupils.

A few schools offer bright students greater opportunities to engage in extracurricular activities than are available to the average student. One respondent writes that although the school does not offer such opportunities to superior students, gifted children "make the opportunities themselves."

#### 6. *The Teacher of the Gifted*

Only five schools give the teacher of gifted children a lighter load than other teachers. Lightened loads are not considered necessary in the remaining schools, since teaching the gifted is regarded by many teachers as a privilege. Intelligence, teaching ability, skill in counseling, good health, pleasing personality, and interest in gifted children are the factors considered important in the selection of the teacher of the gifted.

#### 7. *Evaluation and Publicity*

Twenty-one of the twenty-nine schools have some system for making periodic appraisals of their programs for gifted children. Ten have published articles describing their experiences with gifted pupils. Only five schools have follow-up service for their graduates. Only three schools issue publicity to the community in behalf of gifted pupils.

This survey, like the preceding studies, reveals a very small amount of provision for the gifted. The number of pupils cared

for by existing provisions is very small. These surveys are substantiated by the table of statistics for 1947-48, furnished by the United States Office of Education. This table shows that fewer than 21,000 gifted students are enrolled in special classes in the elementary and the secondary schools.

Although the amount of educational provision for the gifted high school student is regrettably small, it is somewhat encouraging to note that the number of such pupils in special classes is larger at the secondary level than at the elementary level. Nevertheless, such provision is found only in a few large cities. For example, over 90 per cent of the pupils reported to be enrolled in such classes are found in New York City. Moreover, the typical high school infrequently accelerates the bright student. He is frequently permitted to drift along aimlessly for four years denied the stimulation and the guidance which could enable him to make the most of his gifts.

### Concluding Statement

This chapter affords an overview of the extent and nature of educational provisions for gifted pupils. The professional magazines disclose a decline of interest in the gifted during World War II and the years immediately following. The past two years have brought a somewhat heightened interest in this topic attributable in part to the influence of Terman and Oden's book, *The Gifted Child Crows Up*. Undoubtedly, interest in the gifted child has also been stimulated by the activities of the American Association for Gifted Children, an organization founded in 1946.

Recently published articles on the gifted pupil in the elementary school stress the use of acceleration and enrichment of the curriculum. A number of these articles describe the attempts of regular classroom teachers to enrich the curriculum by providing more diversified materials and richer experiences for gifted pupils. These teachers are making widespread use of child study techniques to ascertain the needs and interests of their pupils. They are also employing more comprehensive and effective methods of appraising learning and evaluating growth.

Notable also is the renewed interest in special classes for gifted pupils. In several recently published articles, these classes are re-

ported to have been unusually successful in bringing about effective learning and desirable personality development in gifted pupils. Despite such evidence, many teachers and administrators doubt the advisability of establishing classes for gifted children. Some educators assert that recourse to special classes is undemocratic, since this practice engenders and encourages class distinction, others believe that the effectiveness and interest of regular classes are lessened by the removal of the most able and stimulating pupils, still others assert that the experience in a regular class has a salutary effect upon the gifted pupil himself, leading him to appreciate and work congenially with his peers. Moreover, participation in regular classes is said to prepare the gifted pupil for a congenial life in a democratic society made up of individuals of widely varying ability.

On the other hand, the advocates of special classes assert that the gifted child is not challenged by the work in a typical classroom which contains a large number of pupils of widely differing abilities. In such a situation, instruction is usually geared to the ability of the average or near average pupil and the extremes are inevitably neglected. These writers point out that the gifted pupil masters the skills in half the time ordinarily devoted to them. Consequently he is likely to develop undesirable habits of work and attitudes of indifference or even resentment toward the school. By the time the gifted pupil reaches the upper elementary grades, he has acquired the knowledge of a pupil classified two or three grades above him. Under such conditions his abilities continue to be unchallenged and he frequently fails to use and develop his gifts. Such neglect results in a great waste of talent. Writers who advocate grouping point out that experimental studies show that gifted children who are placed in special classes receive the stimulation, encouragement, and guidance needed to lead them to make full use of their abilities as well as to develop the most desirable personality traits and attitudes.

Other writers recognize these facts but believe that the welfare of the gifted elementary school pupil will be best served by more frequent use of acceleration in moderate degree accompanied by enrichment of experience in regular classrooms. Experimental evidence offers no satisfactory answer in this controversy. It should be pointed out that perhaps at least half of our gifted children



live in small towns, villages, and rural districts in which the formation of special classes is impractical or impossible. In fact, very few special classes have as yet been established in the elementary schools of America. We shall have to rely primarily in providing more adequately for the gifted pupil upon acceleration and enrichment in regular classrooms. It is to be hoped that many more classroom teachers will be encouraged to undertake such provision. It is to be hoped also that experimentation with various types of school organization will be continued in an effort to test the validity of the several hypotheses concerning the most desirable way to enrich the elementary school curriculum.

Recently published articles describing practices in the secondary school reflect a marked increase of interest in the education of the gifted student. These articles are more numerous than in former years. And the variety of practices utilized attest to a greater ingenuity and resourcefulness on the part of educators. The accounts reveal a rise in the formation of classes for gifted pupils. Reports indicate also a more widespread use of extra-curriculum activities, clubs, creative work, and projects involving research and investigation.

Despite the foregoing evidence of gains, the gifted child continues to be grossly neglected throughout his school career. For example, studies show that public schools rarely provide special classes for the gifted elementary school pupil and that the number of such classes, although larger in the secondary school, is still very small. Thus, the U. S. Office of Education reports that in 1948 only 1080 elementary school pupils and 16,632 secondary school students were enrolled in special classes. Moreover, surveys show that few schools are enriching the curriculum for the gifted pupil in the regular classrooms. The condition described in a recent Ohio survey is perhaps typical of the work of the few states in which special provisions are made for the gifted. Letters received from 258 superintendents disclosed that only 2 per cent of the cities have special classes for the gifted, and that 9 per cent provide enrichment programs. Almost 71 per cent of the superintendents express an interest in the gifted pupils, but indicate that facilities in their schools make it difficult or impossible to offer special opportunities. Only four Ohio cities provide any type of special class work. Cleveland is the only Ohio city having

classes for the gifted pupil in the elementary school. An analysis of letters received from thirty-nine officials in cities selected because of mention in the professional literature showed that twenty-seven cities made special provision for the gifted pupil. In these cities, a great variability is found in practice. A combina-

STATISTICS OF SPECIAL SCHOOLS AND CLASSES FOR  
GIFTED CHILDREN AS REPORTED BY CITY SCHOOL SYSTEMS (SCHOOL YEAR 1947-48) <sup>26</sup>

CITY AND STATE	Number of ELEMENTARY PUPILS	SECONDARY PUPILS	TEACHERS
Athens, Alabama	25	20	2
Birmingham, Alabama	102		3
Los Angeles, California	239		9
Napa, California	99	139	2
Boston, Massachusetts	32		1
Brockton, Massachusetts	21		1
Milton, Massachusetts	76		4
Worcester, Massachusetts	651	44	28
Jackson, Michigan	89		3
New York, New York	1846	16,197	533
Cleveland, Ohio	750	195	28
Corvallis, Oregon	27		*
Allentown, Pennsylvania	85		3
Mineral Wells, Texas	21	28	2
Brigham, Utah	17	9	3
GRAND TOTALS	4080	16,632	622

\* Same teacher for various groups

tion of enrichment and acceleration is more frequently reported than is any other type of provision.

New York City appears to make the most extensive use of special classes. In a bulletin reprinted in 1948 by the New York City Board of Education the statement is made that classes for superior children are provided in the New York City schools.<sup>27</sup> On the elementary level these classes are known as the ICC classes, or classes for the Intellectually Gifted Child, on the junior high school level these classes are designated as RA, or Rapid Advancement classes. On the senior high school level, gifted students may enroll in honor classes, honor schools, or specialized high schools.

<sup>26</sup> U.S. Office of Education, Washington, D.C.

<sup>27</sup> Board of Education of the City of New York, Bureau of Reference, Research, and Statistics, Division of Curriculum Research, *The Education of Superior Children*, Curriculum Division Bulletin No. 3, Reprint 1948.

As the reader scans the current literature describing educational provisions for gifted pupils, he is impressed with the variations in philosophy underlying this endeavor, and with the wide differences in practice. Apparently, the statements made in the *Report of the Evaluating Committee of the Education of Gifted Children in Secondary Schools* made at Cleveland, Ohio, in February, 1939, are largely true today.

In planning many of the individual programs (for educating gifted children) little use has been made even of the meager data available concerning gifted children, and each school system which has planned a program seems to have started afresh as though no other system had worked in that field. In many instances the educational programs have been limited to an attempt to raise school marks — an altogether too limited objective. Nevertheless, the committee recognizes the fact that such pioneering efforts provide helpful suggestions for a program for the education of gifted children and for that reason should be continued. Research findings in regard to the characteristics of gifted children have not been interpreted in terms of school practice. For example, studies have shown that gifted children generally have unusual drive, initiative, and broad interest, but these findings have not been translated into appropriate school practice.<sup>1</sup>

There is great need for stimulating interest in the education of the gifted. This need is being recognized by many leaders such as President James Bryant Conant of Harvard University, who writes:

I wish some organization identified in the public mind with concern for all American youth would take some dramatic action to demonstrate a vigorous interest in the gifted boy and girl. This would serve as an encouragement to all teachers. The schools would be stimulated in a direction which in some quarters has been rather spurned as being undemocratic and old fashioned. A National Commission for the Identification of Talented Youth has been suggested by one group of educators, the sponsoring of this by public school administrators and teachers would be the sort of thing I have in mind.<sup>2</sup>

<sup>1</sup> "Report of the Evaluating Committee of the Education of Gifted Children in Secondary Schools," National Committee on Coordination in Secondary Education Meeting at Cleveland, Ohio, February 27, 1939, *Journal of Educational Sociology*, Vol. VIII, pp. 120-128.

<sup>2</sup> James Bryant Conant, "Education in an Armed Truce," *Atlantic Monthly*, Vol. CLXXII (October, 1943), pp. 43-52.

It is to be hoped that the work of the American Association for Gifted Children and other organizations will lead to more widespread efforts to care for the gifted. Indeed, the practices reported throughout the United States are insufficient to satisfy and foster the full development of society's richest but most neglected resource — gifted and talented children and youth.

## A HIGH SCHOOL OF SCIENCE FOR GIFTED STUDENTS

The Educational Policies Commission of the National Education Association has stated the case for gifted children with force and cogency in their recent publication, *Education of the Gifted*,<sup>1</sup> which is an extension and reaffirmation of principles expressed in an earlier report, *Education for All American Youth*.<sup>2</sup> Their convictions may be briefly summarized as follows: "American society needs its ablest members in positions of leadership and influence . . . Educational opportunities should depend more on ability to learn than on ability to pay . . .

A considerable proportion of the potential abilities of gifted individuals is at present lost to society through underdevelopment, underuse, or misuse . . . Schools and colleges must first identify those of their students who are gifted. The differences between the gifted and the ungifted are relative and not discrete. . . The highly gifted and the moderately gifted constitute the top 10 per cent of the total school population . . . The educational experiences for gifted students should, because they are human beings and citizens, include a good general education, but in addition, because they are the potential leaders in a contracted, technological world, they need a wide acquaintance with the record of human experience, familiarity

<sup>1</sup> Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators, *Education of the Gifted* (Washington, D.C. National Education Association, 1950)

<sup>2</sup> Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators, *Education for All American Youth* (Washington, D.C. National Education Association, 1944)

with foreign cultures and languages, and basic training in the tools and concepts of modern science. . . . They will all graduate from college and many will complete professional or scholarly work after college graduation. . . . Because gifted students learn more rapidly than others, they can learn more when their educational programs are enriched and when they are challenged to meet high standards of attainment. . . . Teachers of gifted students need several special qualities. Teaching methods for gifted students should be flexible. . . . The American people must [therefore] invest a larger portion of their economic resources in the education of individuals of superior talent. Such investment will result in a disproportionately large return in social dividends."

### Numbers of Gifted Students in High Schools

Although there is no general agreement on how many gifted pupils are to be found in the high school, it is essential to deal realistically with this question. Let us, then, accept the rough line of demarcation proposed by the Educational Policies Commission; namely, that 10 per cent of the six million boys and girls in American high schools have IQ's better than 120, and that, therefore, 600,000 of them are either moderately or highly gifted. Certainly, at least this number can profit from and should have a college education. Twenty-five years from now, a large proportion of this group will probably be leaders in our nation's business, politics, professions, arts, and sciences. Even if one seriously questions the practice of using the intelligence quotient as a criterion, and even if the 600,000 include some who should not be there or exclude some who should be there, a major fraction of them are destined for leadership.

### Size of the High Schools

Except for those who live in one or two very large cities, the 600,000 moderately and highly gifted high school boys and girls attend the same schools, sit in the same classrooms, study the same texts, and are taught by the same teachers, as are all the other 5,400,000 high school students. Of the 600,000 gifted students, as here defined, 200,000 live in cities with populations of

100,000 and over. Such communities can afford to maintain perhaps four or five different high school structures, each accommodating at least 500 students. Another 100,000 of the gifted boys and girls live in areas where consolidation of resources is possible, so that again, several high schools of reasonable size can be organized. In other words, about half of the gifted children attend high schools of 500 or more students and live in areas where several high schools are reasonably available. The remaining half, or 300,000 gifted boys and girls, live in such small communities that the high school population numbers less than 500, or if it is larger, only one school is reasonably available in the region.

These rough estimates are of prime importance. Cost of instruction, variety of teacher talent, flexibility of program, and many other factors which determine provisions for individual needs, all depend upon the size of the school unit. In recent years, administrators have recommended consolidation of schools. More study and research are needed before we can determine how small a high school can be and still maintain adequate educational opportunity for all the students. It is safe, nevertheless, to say that even with twice the amount of money now available for high school support, no school unit of less than 500 students can offer the enriched and flexible program required by the varying interests and abilities of its students, not to mention the enrichment called for to meet the needs of gifted boys and girls.

From a practical point of view, therefore, there is little to be gained for the larger school from a consideration of what is best to do for the gifted in the very small school. Both types of schools are similarly handicapped in caring for the entire range of abilities. Research is needed to determine how to provide most effectively for the gifted in each type of school.

### Extent of Opportunities for the Gifted in the Larger Schools

At the high school level, variability in achievement probably reaches its maximum. The teacher meets about 150 or more students each day. It often takes a month before he can call each of them by name. Associating different sets of abilities and interests with these names is another time-consuming task. Yet, in the class

assembled at random, we expect the teacher to organize smaller groups for learning purposes. There may be need for as many as four or five such groups. Not only interest and ability, but subject status is important. Reading comprehension also plays a part. Assignments must be varied. As many as five or six committees must be kept going. Students are transferred in or out. Some groupings may be continued for a long time, others for only a day or two. Different texts, tests, and supplementary materials must be procured, assembled, and otherwise be made available to each of the groups. The teacher must meet parents and become familiar with home conditions. With all this, he is expected to provide work involving the entire group. Otherwise there could be no planning, no coordination, no over-all goals for class achievement, no feeling of membership in a total group. All of this must be done while carefully avoiding any reference to dullness or brightness. Praise must go to each, since the individual learns best and achieves most when commended. Truly the teacher of a heterogeneous class must be Superman himself!

If society could afford a teacher for each student, the problem of caring for individual needs would be largely solved. Since that is impossible, we must perforce develop procedures for working with groups, large groups most of the time, small groups some of the time, and with individuals occasionally. Opportunity for attention to individuals is proportional to the frequency with which reasonably homogeneous groups can be formed. Since the large school makes grouping more feasible the development of procedures for varying groups becomes more successful though never easy.

### Some Devices Proposed and Tried

The literature on the gifted is replete with accounts of efforts to depart from mass instruction through grouping devices. None of the devices is perfect. None brings to the teacher a perfectly homogeneous group. At best, they yield groups that are less heterogeneous than they would be if gathered at random. To that extent the high school teacher has an opportunity to do something in meeting individual needs.

In considering provisions for the gifted, the Educational Poli-



cies Commission cites four devices sometimes used and recommends a judicious combination of two or more, depending upon circumstances. Accelerating the bright is one device, enrichment and a program of elective courses are two others. General ability grouping is the fourth, but this recommendation is made with reservations and is suggested only for larger schools. Its chief weakness stems from the assumption that the IQ is a valid basis for classification and from the unsubstantiated hypothesis that all mental functions are substantially correlated and organized around a predominating general factor which determines the general ability level of the individual.

During the past twelve years the New York City high schools have experimented with three grouping devices for educating gifted children. Each of the devices has its devotees and its critics. The first is the organization of so called Honor Classes in the various subject areas. Thus, Honor Classes in English, history, mathematics, language, and science are formed at each grade level. The basis for admission is usually a high grade in the previous semester's work in the particular subject in question. Occasionally the IQ is combined with grades. Since work is departmentalized, any given boy or girl may be doing Honor work in English but attend a so-called normal class in other subjects. Some difficult administrative problems frequently arise and even the very large schools find it necessary to abolish some Honor Classes on occasion. No thoroughgoing study has ever been made of the outcomes of Honor Classes, yet many teachers and students endorse them. Such classes do provide opportunity for enriching the curriculum and for raising standards of achievement in accordance with ability.

A second device, somewhat less used because it is feasible only in a very large school, is to organize an Honor School within a high school. This arrangement tends to select the college-bound students. Again, the basis for selection is usually a high average grade in all subjects during the Freshman year. Occasionally, the student's IQ is taken into account. A portion of the faculty is usually selected to work with these students. All the classes are then in the Honors category. The special staff of teachers find opportunity to meet at regular intervals, in order to coordinate their efforts. The degree of homogeneity attainable by this device is

not nearly so great as in the case of Special Honor Classes. Administrative problems are usually less severe, but parent and teacher objection is greater. There is also frequent complaint from students compelled to meet standards higher than those applied to their fellows in the more normal segment of the school. Although Honor Schools are much criticized, administrators and teachers associated with them endorse their work highly on the ground that such schools provide richer opportunities for the gifted than would have otherwise been possible. While no thoroughgoing studies on Honor Schools have been published, they have been discussed in detail, with "pros and cons" in the references cited below.<sup>3</sup>

### The Specialized High School

A third device for reducing the magnitude of differences in instructional groups is to organize an entire school, its curriculum, faculty, equipment, and procedures, around a *purpose* that is meaningful and attractive to the students. Students apply for admission, they need not enroll if the announced purpose does not appeal to them. Further, all who apply are not admitted. The school is permitted to develop such standards of admission, objectively applied, as are in keeping with the school's purpose and which will make more likely acceptance of only those students who will profit from the school's offering. While such a selection factor has no necessary relation to general ability, it does take advantage of such correlation as exists between and among traits. Early identification of a strong interest or aptitude produces a "halo effect." It often serves as motivation for learnings in related fields and stimulates generalized achievements. Furthermore, in the case of those "purposeful schools" which are based on areas of learning requiring reading comprehension, possession of fundamental skills, and ability to reason, the schools very purpose tends to select automatically a group of high-level ability students. This has been found true in the High School of Music and Art, the High School of Science, and others.

So far as we know, the role of *purpose* has never been thor-

<sup>3</sup> *High Points*, New York City Schools, December, 1939; May, 1940, September, 1940, and November, 1940.

oughly explored as a means of providing opportunities for the gifted. The specialized high school is attempting to do this in the school system of New York City. For many years *purpose* has been utilized with considerable success in the organization of technical high schools and vocational schools. In one sense, the specialized high school is capitalizing upon these experiences and utilizing proved techniques in behalf of large groups of moderately and highly gifted boys and girls who, early in life, have identified for themselves a serious life purpose and aptitude.

### *Differences between the Specialized High Schools and the General High Schools of New York City*<sup>\*</sup>

The specialized high school is a school above the eighth grade, designed throughout to meet the needs, interests, abilities, and terminal aims of a particular segment of the adolescent population. The opposite of the specialized high school is the general or neighborhood high school, designed to educate all the children of the neighborhood with only such adjustments to individual needs as can be provided under one roof.

The specialized high school selects its students on the basis of interest and the ability to succeed in the special field to which the school leads, rather than on the basis of general academic competence. Nevertheless, high general competence frequently accompanies well-developed interest and high ability in a particular direction. This is especially true in the fields of science and mathematics.

The range of general competence in a specialized high school is more limited than in a general high school; the student body is more homogeneous. The specialized high school is not a thinly disguised honor school for academically superior students.

### *Need for the Specialized High School*

So long as the American high school did not attempt to educate more than a small minority of the adolescent population, and so long as that minority came from the top tenth of the entire population, the academic curriculum did not constitute an

<sup>\*</sup> The material in this section is a summary of the first part of a pamphlet entitled *Specialized High Schools in New York City*, published by the Board of Education of the City of New York (1946) and written by Donald K. Phillips and Basil T. Coleman. Dr. Morris Meister served as chairman of the editorial committee.

acute problem Today, however, nearly *all* adolescents attend high school It has been generally assumed that all young people, except the absolutely feeble-minded, are capable of learning the academic curriculum, if they will but put forth the necessary effort We have learned from bitter experience that no amount of effort can bring the academic curriculum within the competence of the great generality of adolescents The range of interest and ability to be found in any unselected group of adolescents of approximately the same age is so great that uniformity in the attainment of educational goals is impossible

Studies in this field have shown that, of those who drop out of high school before graduation, about 90 per cent do so because they found the school work hopelessly difficult Yet many of those who were graduated did not find the work sufficiently difficult to challenge their abilities If segregation, special methods, and costly educational effort are admittedly necessary in working with the very low levels of intelligence and ability, analogous special provisions must be made for the very high levels of intelligence and ability To neglect the needs of the upper segment is as serious for the community as to neglect the needs of the lower segment While a large investment in the education of the lower segment is necessary for social safety, an equal investment in the upper segment would be returned to society tenfold in creative achievement and progress

When the academic curriculum fails to promote mastery of knowledge and skills, we tend, nevertheless, to justify the education in terms of intangible values However, the possibility of achieving intangibles should not blind educators to the fact that the tangibles are not being achieved Despite the fact that most of those who drop out of school do so in the ninth and tenth grades, the age of the average dropout is but little less than the age of the average graduate — even with the most liberal promotion policy in the history of the schools

### *Learning Situations and Social Environment in the Specialized High School*

When there is too wide a range in the general competence of a student body, the teaching situation is unfavorable and sometimes injurious to all Educators agree that the optimum learning

situation is one in which the task set the learner is within the range of his ability but difficult enough to require considerable effort. If the task exceeds the capacity of the learner, not only does he fail to learn anything by it but, if the situation is repeated often enough, he may develop a sense of frustration, and ultimately, an inferiority complex.

The mere mixing of a group of heterogeneous students gives no assurance that this mixture will fuse into a harmonious whole. Indeed, the opposite may happen. Such a mixing may actually create a situation which breeds those antagonisms and patterns of dominance and recessiveness which it was designed to avoid.

A heterogeneous student body is sometimes recommended on the ground of democracy. This argument is specious. It is not true that individuals in a democracy live and work in groups as heterogeneous as the generality of the population. The home, the family, and the circle of friends which surround a person are often fairly homogeneous groups. Even at work, one's associates are not so heterogeneous as the generality of the population. The goal to be striven for in a democratic society is a well articulated group. It is certainly not true that forcing individuals of widely divergent abilities into a single class is the best method of teaching them to understand each other, or to make pleasant and mutually helpful contacts.

A completely homogeneous student body is neither possible nor is it ever an end which is sought directly by a specialized high school. The specialized high school does seek to avoid the impractical ranges now commonly found in the general high school. It seeks to avoid the tendency for the group to break up into cliques — often antagonistic to each other.

### *Value of Purpose in the Specialized High School*

Purpose is the motive power of the learning process. Students can accomplish tasks quite beyond the degree of competence they usually display if they have a strong purpose which is their own, rather than that of their teacher or the school. The many recent youth studies have shown clearly that the purpose which dominated the general high school never became the abiding purpose of many of the students.

The upper segment of high school students find in the appropriate special school a realization of purpose which they cannot find in the general high school. They can do the work required in the general high school in much less time than it takes the other students. When this extra time is not wasted, it is rarely employed at levels which bring the maximum return. In a specialized high school this extra time is used to better advantage. For example, in a high school of science, the students are those who have demonstrated a more than-passing interest in science, and who will later become physicists, doctors, engineers, chemists, biologists, psychologists, research workers, and the like. Science, to them, has a purpose not as easily found elsewhere.

### *Opportunities for a Well rounded Education Provided in Specialized High Schools*

The specialized high school does not encourage narrow specialization, nor does it offer an education devoid of aesthetic and cultural content. And there is nothing in the specialized school which makes this necessary. The division of subjects into cultural and noncultural is not a matter on which there is general agreement. But on the basis of any definition of culture, the specialized high school is in a more favorable position than is the general high school to create an environment conducive to cultural growth. The fact is that students in the science high schools study more English, more social studies, more mathematics, and as much foreign language, music, and art, as do students in general high schools.

The breadth of an individual's education depends only to a slight extent upon the distribution of his credits of work. A well-rounded program does not necessarily produce well rounded students. A broad education is the product of broad interests. And interests do not operate in single compartments, they reach out and include a number of related fields. If, on the other hand, the student lacks a real interest, the entire school machinery will be able to do little more than to bring him to the point of passing an examination.

The interest pattern of the very intelligent person is broad, such an individual has real and lively interests in world problems in literature, in art, in music, and in various other areas.

### *Better Integration of the Curriculum in Specialized High Schools*

The human mind develops best when opportunities are given for creative and meaningful experience. Yet the high school curriculum, with its many subjects in neat compartments, provides a mechanistic approach to learning. The curriculum, for the student, is the sum of a number of constants and variables. Little attention, if any, is paid to the integration of subjects (constants and variables) into an organic whole.

To achieve integration effectively for the adolescent, one must have a central purpose. Such a purpose exists for students in a specialized high school. The greater homogeneity of the student body with reference to dominating interest, level of ability, and terminal aim opens up opportunities, not otherwise obtainable, for bringing ideas together that belong together. Although syllabi may look the same for both types of schools, the teaching and the learning which result from them are distinctly different. One needs only to visit a classroom in English or social studies or physics in a specialized high school to be impressed by the extent and the quality of curriculum integration and by the superior performance of the students.

### *Number and Kinds of Specialized High Schools in New York City*

The publicly supported secondary schools in New York City number about eighty, exclusive of the junior high schools. About twenty of them might be termed "specialized" in the sense that their philosophies, organizations, curricula, and equipment center about a "purpose." Not all of them set up specific tests for admission, yet all of them are, in effect, selective, their "purposes" are well communicated and well understood by teachers, parents, and students. At least four of them cater about "purposes" which tend to select high-level ability students. These are Brooklyn Technical High School, High School of Music and Art, High School of Science, and Stuyvesant High School. Hunter High School, under the wing of Hunter College, is for girls only. It is not organized around a "purpose" as here defined. Its curriculum is largely college preparatory, its students have all passed a highly competitive test of admission and are all, undoubtedly, in the category of the moderately and highly gifted. Only the High

School of Music and Art and the High School of Science are co-educational. The other two are for boys only.

### The High School of Science<sup>5</sup>

Let us see what kind of boy is accepted for enrollment in a specialized school of this kind. Bill has had a course in the elementary school in which some attention was paid to science. In the eighth grade he has applied for admission to the High School of Science. He has an excellent record in his studies, being especially good in science and in arithmetic. He shows some mechanical aptitude as well. He has the usual boy's interest in aeronautics, radio, and photography. He enjoys work with numbers. At home he tinkers with a chemical set and a small microscope. Somehow, he finds the time to play the piano, to be a Boy Scout, and to satisfy a great curiosity about many other subjects. When the school held a Science Congress, he submitted a project and won a prize. On this occasion he enjoyed his contact with like minded boys and girls who stirred up his interest in science work.

When the counselor showed Bill the brochure about the High School of Science, Bill's interest was stimulated. His parents encouraged him to take the test of admission. The examination itself contained very little about science. Instead, it tested Bill's vocabulary and comprehension. It asked him to write a short paragraph on one of three topics suggested by the examiner. Then he was asked to do some problems in arithmetic which tested his ability to reason, as well as to add, subtract, multiply, and divide. The test was formulated by Dr. Irving Lorge of Teachers College, Columbia University.

The results of the test showed that Bill had scored in the upper third and so he was tentatively accepted. Some of his friends on the border line were called for interviews by the Committee on Admissions. During these interviews the genuineness of the interest in science of these students was tested by a panel of guidance counselors. The students were urged to give reasons for seeking admission to such a school. When the sifting process was

<sup>5</sup> As principal of this school the writer is of course intimately acquainted with its operation. The description of this school is offered only as one illustration. Unquestionably, other schools have similar and perhaps better stories to tell.



over, about one out of every three applicants was invited to enroll in the High School of Science

### *Students Attending the High School of Science*

Here, then, is a brief and generalized profile of a typical student in the High School of Science. He wants to go to college and make science his career, however, he is not too definite in his interest. He is a year younger than the average high school student of the same grade, but he knows the fundamentals of arithmetic and spelling. He reads extensively in many kinds of books and periodicals. He is alert to current issues and is capable of profound loyalties. He complains about too much homework but puts a considerable amount of time on daily study. He spends much spare time in his home laboratory and on other hobbies. Because he is eager and vocal, he is sometimes difficult to control in class. He is hard on the teacher and can spot at once the one who "doesn't know his stuff." He has achieved an early sophistication in the importance of marks and is aware of short cuts to high grades. His mental and physical health is excellent. He welcomes the advent of girls with typical adolescent enthusiasm. Though young, he is proficient in athletics, participating in and supporting baseball, soccer, swimming, basketball, tennis, handball, and track. He may work after school and during the summer. He joins many clubs. His IQ is exactly at the median for the school, it is 140! He offers his teachers the greatest possible challenge, spiritually and professionally.

His parents may come from any one of many economic levels and be engaged in one of many types of work or professional activities. In any case they are keenly interested in his school and in his progress there.

### *Program of Studies*

In the first year the important task is to ease the student into the new environment. This is achieved through an integration of the usual high school subjects: English, social studies, science, and mathematics. The first unit of study introduces the boys to school ways, to subject areas, to good work and health habits, to clubs and to social contacts. A Freshmen's Haven helps them to find friends. Other units of instruction serve as aids in the solu-

tion of problems of modern city living Trips are taken, movies and club programs are shown, guest speakers are invited Classes may meet in small clubs for special work or in dramatic or discussion groups

In the Sophomore year, the curriculum proper is begun The attempt is made to meet the needs of the special student body and to carry out the school's philosophy The latter might be briefly stated as follows the school is designed to capitalize, for purposes of general education, upon a special interest in the sciences among adolescent pupils It aims to prepare its students to meet the admission requirements of both liberal arts colleges and engineering and technical schools

After a first year in the integrated curriculum and a second in a course emphasizing general education values — a period in which his interests in science have been fed and encouraged in the regular science and mathematics courses — Bill is ready to pursue any special interests he may have developed within the sciences

In the biological sciences Bill can follow his basic course, with a year in clinical laboratory techniques This course prepares some students for work as medical technicians The course includes such experiences as urinalysis, hematology, exercises in blood chemistry, and serology Or he can elect a Field Biology course in which he has opportunity to study plant and animal life in the parks surrounding New York City

For the girls in Bill's class there is an elective course in Nutritional Science and Home Economics A new and specially equipped laboratory for this purpose has been recently completed The equipment makes possible a large variety of experiences in every aspect of Home Technology

In his first two years Bill also has had an opportunity to work in the introductory science laboratory, which is well equipped for work in individual and group projects and experiments connected with both hobbies and class work Another specially equipped room contains live plants and animals, an incubator, a sterilizer, centrifuge, and more than one hundred microscopes Here, a variety of student squads carry on investigations with penicillin, and with protozoa and other microscopic animals

In the physical sciences, Bill follows basic courses in Physics,

Chemistry, Industrial Arts, and Mechanical Drawing. These are followed by electives, such as Aeronautics, Electronics, Motor Engines, Elementary Qualitative Analysis, simple Organic Chemistry, or a course in the Historical Development of Science. Other possibilities are Advanced Drafting or Advanced Science Laboratory Techniques. There is, in fact, a course in science for each of the four years, and each science course is liberally provided with individualized laboratory work.

In mathematics, a four year sequence is possible, including courses in Algebra, Geometry, Intermediate Algebra, Trigonometry, and Solid Geometry. He can top these studies by way of an elective with a course in Higher General Mathematics — a course designed to integrate and apply his high school mathematics to science and to life in general.

It must be emphasized that in all this seeming specialization the school does not lose sight of the general education which is its aim. Upon graduation at the end of four years, Bill has had, in addition to four years of laboratory science, drafting and shop and three to four years of mathematics, four years of English, four years of social studies, three years of a foreign language, a four year program in Health Education, as well as courses in Art and Music Appreciation — all of these frequently integrated with each other and with the sciences. The social and humanistic implications of science become clearer through treatment of the same topic (such as race problems) in biology, in social studies, and in economic geography. By virtue of the mental climate of the school, Bill's teachers have all been imbued with the importance of stressing the social implications of science in a modern, scientific, democratic civilization.

Surveys, interviews, and follow up questionnaires have shown that students in the High School of Science are interested mostly in careers that fall roughly into the categories of medicine, engineering, dentistry, science research, and the allied technologies, including teaching, pharmacy, mathematics, biology, chemistry, and physics. Nevertheless there are some who ultimately enter business, law, journalism, accounting and other fields. These diversified goals are kept in mind by the staff of the school.

Insofar as the broad national outlook is concerned, an excellent description of our objective is represented by the following state-

ment of Dr James B Conant, President of Harvard University, before a Congressional Committee hearing on the National Science Foundation Bill, March 7, 1947

In all the discussion about research that goes on in these days, an obvious fact is sometimes overlooked, namely, that it is men that count. And today we do not have the scientific man power requisite for the job that lies ahead. The bottleneck of our scientific advance is essentially a man power shortage, and unless something is done about it, the bottleneck will be more constricted a decade hence. Now let no one imagine that, like some of the man power shortages in the war, this can be cured by mobilizing and training for a short time the first people who come to hand. Scientific and technical advances depend on quality as well as on quantity or, to put it another way, on the quantity of exceptional men. These men have to be located when they are young and then given a long and expensive scientific education. For only in this Nation, where universal education reaches to the high school level, is it possible to locate the hidden reservoir of talent which, if tapped, can enrich our life and that of all mankind.

### *Extracurricular and Cacurricular Work*

The extracurricular work in the High School of Science occurs both during school hours and after, within the school building as well as outside. It reflects the interests and activities engendered and stimulated by the curriculum itself.

Naturally enough, a large number of school clubs concentrate their interests in related science activities such as radio, aeronautics, microbiology, glass blowing, photography, histology, mathematics, bacteriology, engineering, natural history, architecture, astronomy, seamanship, the Science Explorers Club of the freshman year, and others. Nevertheless, the spontaneous interest in the humanities reflects the broadest scope of the school's objective. Large groups of boys are attracted to the Creative Writing Club, the Dramatic Society, the staff of the *Science Survey* (the school newspaper), the Forum, the school orchestra and chorus, the Chess Club, the language societies, as well as to the athletic teams.

Included, too, in extracurricular activities are the large number of squads that serve in the functioning of departmental offices, libraries, laboratories, preparation rooms, supply depots, gymnasium and medical rooms, and school offices.

It is interesting to follow the growth of these activities. In 1939

there were twenty-six extra- and three cocurricular groups. These had grown, by 1950, to eighty-five extra- and fifteen cocurricular groups. It may be mentioned here that the typical student, active in these affairs of the school, is also playing a significant part with other students and teachers in community efforts.

These varied groups are unified by a democratic school government, with its council of school representatives and its elected officers, all under the sponsorship of the Student Organization and under the advisership of the faculty committee on extracurricular activities. Two notable student-stimulated and administered activities are the Student Store and the Student Social Lounge.

Freed from the rigidities of the school bell system and from the need for extremely large classes, boys and girls turn frequently to varied forms of extracurricular activities which are conducive to balanced growth.

### *Individualized Guidance*

How is Bill helped to chart his curricular and extracurricular career at the High School of Science? How are the 2400 students guided toward better adjustment, wise choices, proper attitudes, and intelligent decisions? Although this help often comes through class endeavor, through the health program, and through many other school channels, it is the special responsibility of the Guidance Committee of twelve teachers. Individual guidance consists of interviews with guidance counselors as follows:

Term I Orientation interview, in which the nature and purposes of the school are reviewed, while the pupil is given a brief glimpse into the future (courses, clubs, colleges, scholarships, jobs).

Term IV Electives Choices begin in Term V.

Term VII Colleges or jobs, with evaluation of record and advice based on record, aptitude, interest.

Thus each boy is interviewed personally at least three times. Interviews are also scheduled in cases where failure occurs, or personal problems arise, or transfers are requested.

### *Group Guidance*

The program of group guidance supplements these individual interviews. The homeroom program deals with (1) general prob-

lems, such as manners and personality, study habits, community activities, and (2) specific core units Term I—The extracurricular program, Term V—Choosing a life work, Term VII—How to apply for admission to a college Other group meetings undertake to give social guidance, job and college guidance, and scholarship guidance, and are usually addressed by a guest speaker

### *Health and Health Guidance*

Students receive individual and group guidance in health matters through the Health Education personnel Every boy is given an annual physical examination by his family physician, and brings an annual "Dental Completion" note Health activities include a Pentathlon classification series of self-testing activities, apparatus, mat stunts, sport and athletic techniques, Ranger activities, tap and social dancing techniques In addition there are after-school intramurals, a Gymnasium Leaders' Corps, and six varsity teams, including the swimming team which practices in the school swimming pool

### *Faculty*

In the early years of the school's history, the principal was able to select ten young, well trained, and competent heads of departments They have been towers of strength in developing the school's philosophy and practice Among the remaining ninety members of the staff, many able and superior teachers volunteered to transfer to the school from other schools Due to an annual turnover of about 10 per cent in personnel, the staff as a whole has changed considerably over the years New personnel is obtained from civil service lists of licensed teachers The licensing procedures in New York City are quite rigorous and, by and large, new personnel is well equipped and well selected It may be pointed out that in twelve years, more than thirty of the staff have won promotions as heads of departments or school principals Nevertheless, not all of the present faculty are equally suited for the task of guiding gifted children In this connection we wish to endorse the point of view of the NEA Policies Commission that the qualities especially needed in a teacher of gifted children are superior intelligence, a rich fund of information,

versability of interests, an inquiring mind, ability to stimulate and inspire, modesty, a sense of social and professional responsibility, freedom from jealousy, freedom from excessive sensitivity to criticism, understanding of educational psychology, with special knowledge of the psychology of gifted children." To these we would add a love for and understanding of the adolescent and mastery of subject matter. While all high school teachers should possess most, if not all, of these qualities, the lack of any one of them is a distinct handicap to a teacher of the gifted. Unfortunately, personnel appointment procedures in a large school system do not always give the head of a school for the gifted the freedom of choice called for by the nature of his responsibilities.

### *School Plant*

The school plant which would be best to do the job is still on the drafting boards. When the school was founded in 1938, it was assigned to an ancient building, once used by Waltoo and by Evander Childs High Schools, and still (in 1938) inhabited by a DeWitt Clinton Annex. The new school opened on the premises and operated jointly with the Annex for a year.

Then while a curriculum, a faculty, and a tradition were being shaped, a school was built literally around the classes — and in them. Laboratories were set up, shops were created, walls, tables, equipment, plumbing, and electrical fixtures were demolished and restored.

Many tales are told of those pioneering days, like that of the plumber who would not cease hammering despite the pleas of the principal, the custodian, and the teacher in charge of an important forum about to take place in a large room. However, despite his insistence that the contractor would not allow it, the workman did stop long enough for the activity to continue successfully when he found that the forum was a discussion among employers, management, and labor leaders — and in response to one of the union spokesmen who added his eloquent plea.

The point is that the physical facilities remain crude, especially in the light of our aims, but we have struggled to utilize them to the maximum. The school's Music Room for example, mixes the strains of Beethoven with those of hungry students, since the door opens on the lunchroom. Commencements are held, of necessity,

in other places because our auditorium is too small, the same is true of dramatic performances, since stage equipment is lacking

But special machine, metal, and wood working shops are set up and serve the Science Techniques Laboratory courses required of all students, and also an advanced elective course for many other students. The equipment may be used to complete individual projects that are related to the science interests of the students, after precise mechanical drawings (a required course) of models have been approved. Some typical results are an electronic calculator based on some war surplus equipment, telescopes, steam engines, phonograph amplifiers, test tube racks, photographic enlargers, microscopes, and the like

### *Student and Alumni Achievements*

Practically all of the students are admitted to college. The record is perhaps best summarized in the results of the class of June, 1947, seeking entry at a time of extreme overcrowding of higher education facilities. Of 215 graduates responding to a survey in November, 1947, 213 were enrolled in 63 different colleges. A further check on the 70 who had not replied revealed that all of them were attending college. It is noteworthy that the entire class of 285 had received 579 acceptances from 78 different colleges. Furthermore the class had been awarded 125 scholarships worth \$160,400. That this record is quite typical is indicated by the fact that the class of June, 1950, numbering 391 boys and girls, received 875 acceptances from 125 different colleges and were awarded 175 scholarships worth about \$200,000.

Space hardly permits a description of the thousands of brilliant projects developed by these gifted students. In the well known nationwide Science Talent Search our students have, in nine years, won more scholarships and honorable mentions than the pupils of any other school. The very titles of the winning projects reflect an amazing maturity and grasp of scientific principles. They would do credit to college seniors. One sixteen-year old was elected Fellow of the Royal Microscopic Society of London for his work on microscopes. Another discovered a new species of fruit fly and was acknowledged the discoverer by a world famous entomologist. A third student sent a sample of a new variety of mold of *neurospora* to Dr. Dodge of the New York Botanical



Gardens, who named it H S S, the initials of the school. A number of students have had their articles accepted by the *Journal of Biological Chemistry*, the *American Naturalist*, the *Journal of Industrial Chemistry*, and *Science News Letter*. Another boy made a discovery in protozoology which was independently made by a professor at Brown University and published. One alumnus, as a Junior at Harvard, was assigned to Dr. Oppenheimer's staff at Los Alamos and assisted at the trial of the first atom bomb. The alumni now number about 300 doctors and dentists, about 1500 engineers, about 200 research men, about 500 laboratory technicians, and about 1000 school and college teachers of science. Fifteen per cent of the alumni have gravitated to business, journalism, non science teaching, and other non science professions. One has become a well known concert pianist, another an outstanding artist.

### *Parents and Alumni*

Obvious even to a casual observer is the tremendous appeal which the school exercises for its alumni. Whether this fervor is measured by the letters in our files, or by the way in which the corridors swell with returning alumni on all occasions, or by the responses to questions in a survey conducted by a group of C C N Y School of Education students (non alumni), there is uniform appreciation and high praise for the school on the part of its graduates.

This being the case, it should come as no surprise that the Parents Association of this school is probably one of the most active and enterprising in the secondary school group. A complete article might be written on the stimulating programs conducted by this organization—from "College and Career" nights to which eminent educators and specialists are invited to address parents and students alike, to W. L. Laurence of the *New York Times* on the Atomic Era, or a student parent teacher "Town Hall" on problems of the home. For our purposes, it is important to note a consistent loyalty expressed in activities like pressure on the authorities for building and other improvements in the Education budget, a monthly printed publication addressographed to 2400 families, thousands of dollars raised annually for special scholarship funds for deserving and needy students.

### *Community Reactions*

Dr Vannevar Bush, formerly Director of the Office of Science Research and Development, had this to say about the school

Convinced as I am that there has never been a time when cultivation of science talent is so important to the welfare of our nation and the world, I welcome the opportunity to speak a word for the kind of program which the Bronx High School of Science has been carrying on during the past seven years. This is a very positive contribution toward replenishing our sadly depleted stock of scientifically trained intelligence. The breadth of the program of the Bronx High School of Science — in its inclusion of ample study of the humanities — is not only a safeguard against the hazard of narrow specialization but also the best guarantee that its graduates will have the depth of understanding necessary for the full utilization of scientific skill in their later careers.

This praise from high places is stated in terms especially meaningful for these times.

The school has caught the imagination of the lay public, as reflected in the attention given to it by the public press. Editorial comment in the *New York Times* and the *Sun* has praised the scholastic achievements of our graduates. Feature articles, describing the school, have appeared in the *World Telegram* and in magazines like *Science Illustrated* and *Coronet*. The Associated Press printed a series of photos about the school for nationwide release.

An internationally known writer, whose son attended the school for only one year and was killed in World War II, memorializes his son's name in a biography in which he speaks high words of praise for the school. In addition, he offers a prize of several hundred dollars at each commencement to some graduate.

A parent whose son died while in attendance at the school has established a foundation which is currently paying all expenses of twelve graduates through college and professional school, and supplies the school liberally with funds for current needs not otherwise obtainable. Recently the foundation established a Music Lounge in the Library, with thousands of dollars worth of recordings and a sound system which enables students to listen to records through carphones.

A leading department store merchant in the community, whose son found satisfaction in science studies after being unhappy in

a private school, is seeking to express his appreciation in a contribution which is measured in thousands of dollars

These material gifts symbolize the spirit of good will that has permeated the community regarding the work of the school.

### *Some Unsolved Problems*

Like any other venture into incompletely charted seas, the sailing has not all been smooth for the staff of the specialized school. Not all educators accept the philosophy underlying this endeavor. Some contend that the secondary school period is too early in a student's career for him to engage in any type of specialization. They point to the student whose interest in science wanes, but who is unable to make the easy adjustment to other courses of study that a large, diversified school makes possible. The school attempts to avoid criticism on this score by careful explanation of its purpose and by screening of its entrants. Less than one-half of one per cent seek transfers out of the school.

Another criticism concerns itself with the issue of democracy. Much has been said earlier on this question and surely the pros and cons of this issue have by now been thoroughly set forth, but they have never been subjected to rigorous objective test. To those who work with the boys and girls in specialized schools day by day, this criticism brings only smiles. They would challenge the critics, invite them into the school to observe the children at work and at play. In all that they do, they exemplify a free society in pursuit of democratic ideals in democratic fashion. Modesty rather than snobbusiness is the quality that predominates. There are leaders and there are intelligent followers. The purpose around which the school centers cannot and does not eliminate individual differences. The range of heterogeneity has been reduced sufficiently to make learning more effective and in keeping with ability to learn. Democracy cannot mean that it is more important for a student to reach the teacher's minimum than to reach his own maximum.

Another criticism arises from the undisputed fact that the entrance testing procedure tends to select students of superior intelligence. This results in a concentration of such students in one school, and may attenuate the honor rolls of others. While the answers to such questions as these lie in the general province of

educational values, it must be said that students with clearly defined talents and interests ought not to be neglected. It has never been proved that the less able need the presence of the gifted in order to achieve their maximum.

In fact, an unforeseen difficulty has arisen from the conditions under which these students are graded. Since they compete with each other, their averages tend to be lower, we believe, than they might be in other schools. Unquestionably, a lower percentile rank for some individuals reflects the concentration of talent. Many students might have been handicapped in admission to college had it not been for a carefully planned program of apprising college authorities of the true situation.

Some members of the faculty feel that some of our students may work under too severe tensions and at too great speed, with insufficient recreation. Others feel that the school's curriculum as organized at present does not allow pupils enough time to avail themselves of the full and varied offerings of such departments as art and music. These matters have been the subject of long faculty discussions, and some modifications have resulted and others are under consideration.

Among other unsolved problems, we have already referred to the problem of teacher recruitment. There is great unwillingness on the part of school authorities to give special consideration to the teacher needs of specialized schools. The teaching load is still too heavy. Administrative and organizational regulations are too sharply applied in view of the special needs of gifted children. This shows itself in budgetary allowances for textbooks, equipment, repairs, and other instructional materials. One of the most annoying, sometimes frustrating, problems is the attitude of some superintendents and principals toward the importance of special provisions for the gifted. Whenever a crisis of one kind or another occurs, the authority is likely to say, "Well, the bright kids will come out all right, they'll take care of themselves." The fact is that they do not.

### A Final Word

The writer realizes that in discussing opportunities for gifted high school students he has focused attention entirely upon only half

of the 600,000 gifted students in America — the half that happen to live in populated areas. It is in those areas that school units can be large enough to provide the necessary enrichments and the administrative means. It is only when a community possesses four or five high schools — each with a minimum of 500 students — that it can consider the advisability of a specialized school.

Yet an attack upon half of the problem is certainly worth while. Again we stress that the other half of the problem is so different in kind that it warrants an entirely new approach by those who must work in the situation day by day.

The High School of Science is now in its thirteenth year. In that time it has been accumulating convincing evidence that science talented youth need a specialized type of secondary school education — specialized, however, only in the sense of giving science a special part to play in educating such youth for a free society. It seems vital to the welfare of the country that we conserve this special human resource for the needs of a scientific age. No great nation can now afford to neglect its science talent. Not only is national security at stake, but the security of civilization itself

## SEARCH FOR TALENT IN SCIENCE

The circumstances that bring an Einstein or a Curie to the height of creative fruitfulness, revolutionizing our concepts and enriching the world's essential knowledge, have often been fortuitous. Only a few of the acknowledged scholars and scientists become true innovators of civilization. Many potentially able persons do not realize their promise. Can such persons be identified early and a larger number led to make the most of their talents? This task is difficult indeed. Let us examine some aspects of the problem.

### Advantages of Early Identification of the Gifted

Identifying the gifted is the responsibility of every adviser of youth and of every educator — whether the effort is directed toward a decision regarding scholarships, the right to enter a college, or parental permission to continue in school instead of going to work. It is important also to identify the potentially gifted scientist.

If children in nursery school could be screened so as to identify future scientists with some degree of accuracy, much time and effort might be saved. This procedure is impractical. But it is possible to select promising children and youth at later periods.

At the time of the transition from secondary school to college it is possible to select students who are likely to benefit, to the world's gain, from higher education. College entrance boards and admission committees select students with considerable success.

Acceptance for college entrance, except in special schools, is based upon general abilities rather than specialized talent. Yet it is worth while to search for talent.

### A Nationwide Search for Creative Talent

In 1942, a nationwide search for science talent among the seniors of the secondary schools of the United States was initiated. The annual Science Talent Search for the Westinghouse Science Scholarships is conducted by Science Service, an institution for the popularization of science, with headquarters in Washington.

This national Science Talent Search is much more than a scholarship contest. It is a broad-scale operation intended to stimulate interest in science on the part of secondary school students. Each year, thousands of boys and girls are encouraged to conduct science projects of their own creation. Without this stimulation many might not experience the desire to undertake such experimentation.

The indirect influence of the Science Talent Search is an important factor in acquainting the youth of America with the opportunities and objectives of scientific research.

### Objectives and Requirements of Science Talent Search

The objectives of the Science Talent Search are:

1. To discover and foster the education of boys and girls whose scientific skill, talent, and ability indicate enough potential creative originality to warrant the granting of scholarships
2. To focus the attention of large numbers of scientifically gifted youths on the need for developing their scientific and research skill and knowledge in order that they can contribute to the rehabilitation of an insecure world and, with the aid of science, help the world to achieve peace
3. To aid in making American adults grow aware of the varied and vital roles played by science in world affairs and in the general welfare of our people

The Science Talent Search utilizes modern psychological procedures for selecting gifted youth. Each contestant in the Science Talent Search must clear specific hurdles that have been set up. They must submit evidence of fitness in three ways:

1. By taking the Science Aptitude Test
2. By having school officials complete a personal data sheet and scholarship record
3. By writing an essay on "My Scientific Project"

Entry in the Science Talent Search is open to all seniors but only a small percentage — those most interested and most competent in science — actually are encouraged by their teachers and by administrators of the Science Talent Search to enter.

Some 15,000 entry blanks and examinations are distributed to teachers and school officials each year and about a fifth of them are returned as complete entries. This means that about 80 per cent of those contemplating participation are eliminated at the local secondary school level. The entry requirements are rather difficult. Not only is the examination long and hard, but the student must also submit an essay of about a thousand words describing his project. Many students are unable to fulfill these requirements. Such failure may be indicative of inability to succeed in science research.

When the Science Talent Search was planned, the aim was to pick those students likely to be creative scientists, not just those who might later become successful doctors, engineers, and minor scientists of various kinds. This limited objective aimed at discovering those who might become the rare innovators of our civilization.

Potentially creative scientists are generally bright and able students capable of engaging successfully in many kinds of academic work. They have a strong interest which is shown in their records of in-school and out-of-school activity. They have some background in science, although the examination is designed to minimize content knowledge in various fields and to emphasize reasoning ability. In addition, they exhibit such traits as social competence, initiative, resourcefulness, and good work habits. This picture of the potential scientist suggests a person who is intellectually capable, interested in science, and a leader among his fellows. It is recognized that such criteria for selection may eliminate some persons who later will be leaders in science and invention.

Girls are included in the Science Talent Search. Slightly more than 20 per cent of the entries in a typical year are from girls.



Many factors enter into selection. The choice of 300 out of the 15,000 who enter the contest is of necessity a difficult task. So far as possible, personality factors that accompany the intelligence necessary to make a creative scientist are considered in the selection. The judges are alert for signs of nervous instability or habits of thought that might militate against success in scientific endeavor. The essays which are considered in the later part of the selection process are revealing. These essays are read each year by three or four specialists, whose judgments are pooled.

In order to carry out a selection procedure that would have validity and also would be administratively economical, the "successive hurdles" technique has been used every year. Such a method seems to have its maximum value when the hurdles are applied in decreasing order of importance.

The successive hurdles, mentioned briefly earlier, were set up as follows:

1. Science Aptitude Test, to select those who have the aptitude to study science in colleges and universities. This test does not place too heavy a premium on knowledge of science.
2. High school record, to select those who have demonstrated their ability to profit from formal academic training, together with the score on recommendations furnished by high school teachers, covering such categories as scientific aptitude, resourcefulness, initiative, work habits, social competence, and mechanical ability.
3. Rating on an essay entitled "My Scientific Project."

The first two hurdles are used to reduce the number of contestants to 300. The third, plus all the accumulated data, becomes the basis for selecting the winners — 40 boys and girls to attend the Science Talent Institute in Washington, D. C., each year, and compete for the top scholarships. The remaining 260 receive honorable mention. They are within the top 20 or 25 per cent on the examination, and in the top 10 or 15 per cent of their high school class.

Including the ninth Science Talent Search, completed in 1950, there have been 360 winners. In addition to the recognition accorded the winners, honorable mention has been given to 2340 other young people. Undoubtedly, this recognition is fostering an ever increasing general interest in science and is encouraging gifted young people to develop their talents.

## Results of Follow-up Studies of Winners

How good a job is being done by the Science Talent Search in picking the creative scientists of the future? It has been realized from the very conception of the idea that this selection is a critical and important matter.

In general, there is evidence from the achievements of those selected that the process is bearing fruit. These questions have been asked. Do the winners succeed in greater measure as scientists than those who are awarded honorable mention? Do the honorable mentions succeed in greater measure than those who win no honors at all?

Each year a follow-up questionnaire is mailed to all who have won honors in the searches.

A study of the questionnaires of the boys in the first Science Talent Search has been reported in the *American Scientist*.<sup>1</sup> This study revealed the following facts:

1. More of the honors group (called the A group) majored in science than did the non honors (called the B group) contestants.
2. More of the A group went to college than did the B group. Despite war conditions, each year the winners had the largest per cent in college, and the honorable mentions the next largest per cent.
3. In terms of college grades, the winners averaged 3.55 the second year and 3.52 the third year, (A = 4, B = 3, etc.), the honorable mentions, 3.48 the second year and 3.42 the third, while the other group averaged 3.00 and 2.99. The entire group certainly has set an outstanding record.
4. Membership in honorary societies might be one clue to outstanding achievement. At the third year, 49 per cent of the winners had become members of an honorary society, 17 per cent of the honorable mentions, and of the others, 5 per cent.
5. In terms of scholarships and fellowships, the A group has been considerably ahead of the B group.
6. In considering only the contestants' first choice of professional fields, striking results are found. In viewing the scientific field broadly, 73 per cent of the A group indicated some scientific area as their first choice. This includes 87 per cent of the winners. This

<sup>1</sup> Harold A. Edgerton, Stuart Henderson Britt, and Ralph D. Norman, "Later Achievements of Male Contestants in the First Annual Science Talent Search," *American Scientist*, Vol. XXVI (1948), pp. 403-414.

may be compared to 55 per cent of the B group making a similar response

7. The item, "List and briefly describe any *special* scientific or professional apparatus or other mechanical devices which you have become competent to use since January of last year," yielded no basis for distinguishing the two groups. This item in the questionnaire may become more useful in later years.
8. The items, "List your principal contributions in the form of publications, inventions, patents, etc.," and, "Describe any research or other special work which you now have in progress," produced no answers which distinguished the two groups, A and B.
9. In the first year, 5 per cent of the A group and 6 per cent of the B group reported membership in one or more professional societies. In the second year 11 and 10 per cent respectively reported, whereas in the third year 17 and 13 per cent mentioned such membership. The A group thus has a slight but insignificant excess in the third year. The trend is about the same for the winners.
10. In the follow up study of the male contestants in the Second Annual Science Talent Search, some evidence was offered to show that selection rather than public recognition was associated with such evidences of achievement as have been listed. Using a sample containing only the B group — no winners or honorable mentions — there was some relationship of the selectors (test score, high school record, and recommendations) to successes.

### Conclusions Based upon Results of Follow-up Studies

Using data from only the first three years of follow up of the contestants in the First Annual Science Talent Search, it is believed that boys selected by the successive hurdles tend actually to be superior in terms of several objective criteria. Of the ten criteria, six have been shown to be distinctive: majoring in science, extent of education, college grades, honorary societies, scholarships or fellowships, and choice of professional field. The other four criteria yield no statistical significance between the ranking and nonranking contestants, except possibly "things learned about science," which may be significant in two out of three years.

The follow-up study is continuing with questionnaires being sent each year.

The national search, which is largely a selective procedure, is important to the future of science. And the general stimulation of science interest, even on the part of those who will not become science professionals, is an equally important outcome.

The encouragement of experimentation in science by youth is the function of Science Clubs of America, an activity of Science Service which aids some 15,000 science clubs in all parts of the world. About a third of a million boys and girls are enabled during six years of junior and senior high school to do projects and to conduct inquiries that acquaint them with the method and practice of scientific research.

A great science movement for youth is now in progress in America. In states and cities throughout America, cooperation of scientific organizations, educational institutions, industries, and newspapers is encouraged through participation in science clubs. There are now science fairs in a score of cities sponsored by newspapers and school systems, the National Science Fair is the culmination of the local fairs. This movement dramatizes the importance and appeal of science to students and to the public.

Since 1946, several State Academies of Science have held State Science Talent Searches concurrently with the national competition by special arrangement with Science Clubs of America. In 1950, the states cooperating in this plan to increase recognition of and assistance to young scientists included District of Columbia, Georgia, Illinois, Indiana, Iowa, Louisiana, Minnesota, Montana, Pennsylvania, South Dakota, Tennessee, Texas, Virginia, West Virginia, Wisconsin, and the six New England states.

By entering the national Science Talent Search, students in cooperating states automatically enter their state Science Talent Search. Thus they have a double opportunity to obtain scholarships or other recognition and assistance.

The Science Talent Search is a pioneer project that has focused attention on the significance of scientific ability. As more opportunities for scientific education are created by government or other agencies, the Science Talent Search will undoubtedly prove additionally useful and beneficial to youth.

In a very real sense the Science Talent Search is a part of fundamental research. It is in this spirit that the Westinghouse Electric Corporation, through the Westinghouse Educational Foundation, has supported financially the Science Talent Search as a contribution to the advancement of science in America.

In other parts of the world in connection with technologic development there will undoubtedly be increasing application of

the methods of science talent selection in order that other nations and peoples may be able to nurture their precious creative science talent.

Experience shows that the scientist of the future may be found in large or small cities, in crowded areas or on farms. Good schools and inspiring teachers develop latent abilities, but in the great stream of humanity the ability to think, to perform, and to discover is widely distributed. It is our great responsibility to find science talent and to give it opportunity. Such talent may then help to remake continuously the world and promote the welfare and happiness of coming generations.

## *Chapter Twelve*

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### **EXPERIENCES WITH CHILDREN TALENTED IN THE ARTS**

Traditionally our public schools have been concerned with academic subjects and, in consequence, the search for gifted children has usually discovered the brilliant student in such areas. Mental testing has also often paralleled the school emphasis — excluding the arts — and again has identified as “gifted” those who are able to achieve in science, literature, mathematics, or history.

It should be obvious, however, that while our society offers every child some outlet through the three R's, to some children this way may have little appeal. Many factors, stemming from home, school, or neighborhood, may turn the child away from reading and arithmetic and toward other accomplishments. Thus evidence of superior general ability may be found in non-academic achievement. In addition, we have the individual whose particular combination of inherited traits endows him with what we call talent. We find, therefore, children who discover in pencil, in clay, wood, music, or the sound of words themselves, media through which to gain understanding and to give expression. A child is no less gifted because he chooses these means, but we may be less well equipped to discover and note his success.

#### **Importance of Fostering Talent in All Areas of Art**

It is, however, important that we preserve all forms of talent. As yet we know far too little about so-called special gifts to make de-

cisions for the child. How far talents are related, to what degree general high quality of behavior may be ebanned early in life, to what degree certain children are especially acute in various seosory pereceptions of sound, space, or color, we are not able to state definitely. Nor do we know too much about the effects of various stimuli provided during the earliest years. We do know, of course, that sometimes premature specialization may be a bandicap.

Writing is an area where overemphasis at an early age may prove unfortunate. While many children will, if encouraged, give voice to charming coocepts — as seen in the hundreds of lovely child verses and stories now on record — these may by no means be the future writers of America. Sammy, for example, at four lis-  
tened while his mother tried to lull him to sleep, saying over and over "Sammy will sleep, Daddy will sleep, Mother will sleep." "No, Mother, interrupted Sammy. "People will sleep, people will sleep."

Aooother five year old philosopher asked: "What are words? If they are thungs, and if people go on saying them, why won't the world get filled with words?"

These bits of ereative speech are to be noted and cherished. So are the early writings of young children, or their dictated poetry and tales. Whether such performance indicates speeial taleot is beside the point, it uodoubtedly indicates unusual seositivity to words, ofteo to rhythm and charm of expression. Such interest *and ability may or may not correlate with ability to compute, or read, or to handle scientific materials*.

Similarly, children often show unusual faecility with the use of drawing, painting, or plastie material. This talent or giftedness may take many forms. The chuld may be especially interested in color, aod precocious in ooticing it. A fifteen mooths gurl, to whom oranges and orange juice were known as "o'nge" suddenly cried out "o'ng!" oo scewing a sheet of orange paper. At age three she was selecting the dress to be worn each day, and matchiog it to socks of similar color. Throughout echildhood she showed great debght in color and enjoyed creating pictures. Mental tests classified her as "gifted" and her adult life, though marked by general artistic interests, was devoted primarily to social issues.

A child's continued attention to a problem of drawing, paint-

ing, or modeling is often indicative of unusual aptitude. So is, of course, the ability to do more than copy — to make something peculiarly his own from the medium at hand.

Obviously the purpose of the present chapter is not to outline a curriculum nor to set up plans by which the gifted child of whatever order may be channeled or professionalized. Rather it is to point out the need for recognizing ability and providing means whereby it can grow. Therefore when dealing with a talented youngster we must remember that individual traits — ability to distinguish sounds, control of finger muscles, feeling for rhythm, vocabulary — may not develop at even rates, and that the trait which seems outstanding may merely be the one which at the given time offers the easiest means for outlet.

At one time the child who showed unusual ability in the arts was thought to possess a personality which differed in extraordinary ways from that of other children. Today we are probably much less inclined to believe in the one and only genuine talent, and think rather of most "talents" as combinations of native ability and the emphasis of circumstances.

Research has made some progress in this century in clarifying vague concepts concerning the gifted in many fields, but we are unable as yet to identify potential genius in the arts by objective yardsticks. This is in part because we do not as yet know the degree to which sensitivity to sound, color, line, and so forth exists as a variant from the general pattern of development. Might not Churchill have become a great poet, philosopher, or composer if circumstances had encouraged his interests toward one or another of those fields?

The knowledge we have of the elements involved in artistic aptitude has been derived from experimental work, from observation and analysis of the performance of talented children, from case studies of gifted children and adults, and from studies of the creative expressions of those considered talented.

### Studies of Cizek and Kerschensteiner

One of the most interesting experimenters was the late Franz Cizek. For more than forty years he advocated a program of art teaching in which children's growth was given unusual opportu-



nities for development. This growth was watched, encouraged, and studied, but always the child's enjoyment of the creative act was considered of primary importance.

Here the originality of every child was demonstrated, for Cizek believed all children to be potentially creative. He observed that the creativity of children differed in degree and its quality varied to some extent as the same individual shifted from one medium to another. These experiments gave credence to the notion that artistically talented individuals possess the same general abilities as average or superior children as measured by mental tests. Liberation of the child artist from the shackles of conventional art and craft instruction was practiced far beyond the borders of Vienna, in England and the United States, individual artists and educators, stirred by the new philosophy, were soon conducting their own creative art experiments with children.

The empirical work of the artist, Cizek, was going on at the same time that psychologists were probing the mysteries surrounding the performances of talented children. Kerschensteiner<sup>1</sup> selected children with a special talent in drawing, compared their art achievement with that in other subjects, and concluded that talent for graphic expression is usually associated with good intellectual endowment. Kik,<sup>2</sup> after completing a detailed study of the work of 13 exceptionally gifted children, made the same inference. His observations led him to believe that memory and imagination play an important part in drawing, he classified *drawing as intellectual work and further stated that marked ability in this area is usually an indication of intelligence*. Good school marks were the basis upon which Kerschensteiner identified children of superior intelligence.

Although both men evidently discovered young people with genuine creative ability, the fact that standardized intelligence tests were not used as the basis for their conclusions has rendered their findings on the relationship between intelligence and drawing ability of little more than general historical interest. However, Kerschensteiner collected a wealth of material on the backgrounds of the children he studied, and reported that the

<sup>1</sup> G. Kerschensteiner, *Die Entwicklung der zeichnerischen Begabung* (Munich: Gruber, 1905).

<sup>2</sup> C. Kik, "Die ubernormale Zeichenbegabung bei Kindern," *Zeitschrift fur angew. Psychologie* II, pp. 92-149.

talented children in his community were seldom the offspring of architects, sculptors, or artists, rather, the greatest number were the children of artisans

### Goodenough's Study of Children's Drawings

Twenty years later (1926) Florence Goodenough<sup>3</sup> analyzed children's drawings, and concluded that there is a close relationship between general intelligence and concept development as shown in the drawings of children to the age of ten years, after that, drawing seems to take on the character of a specialized ability and ceases to be a general means of expression

### Efforts to Identify Talented Children by Means of Tests

In discussing the needs of superior children, Hollingworth directed attention to the lack of correlation existing in the relationship between high intelligence as measured and musical or art ability.<sup>4</sup> These were the only two abilities in which relatively high correlations failed to appear. A realization that the aesthetic side of an individual's personality received little evaluation in an intelligence test was shared by Terman and other less well-known workers in the field. The Los Angeles Tests in the Fundamental Abilities of Visual Art were devised to identify the aesthetic aspects of intelligence. Seven of the many skills involved were tested, the results showed low coefficients of correlation. Lewerenz's findings indicated that an individual who is an outstanding success in the field of art will also rank high on a test of general intelligence, but a high intelligence test score does not indicate corresponding ability in art, hence, predictions of success in art based solely on intelligence tests are little more valuable than random guesses.<sup>5</sup>

Further support was given to this theory on the completion of Hurlock and Thomson's studies.<sup>6</sup> Although they analyzed the

<sup>3</sup> Florence L. Goodenough, *Measurement of Intelligence by Drawings* (New York: World Book Company, 1926).

<sup>4</sup> Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture* (New York: The Macmillan Company, 1926).

<sup>5</sup> A. S. Lewerenz, "I. Q. and Ability in Art," *School and Society*, Vol. XXVII (1928), pp. 489-490.

<sup>6</sup> E. B. Hurlock and J. L. Thomson, "Children's Drawings: An Experimental Study of Perception," *Child Development*, Vol. V (1934), pp. 127-138.

drawing of single forms rather than creative compositions and studied these forms in relation to the intelligence test results of their creators, they could only conclude that drawing ability showed little relationship to age or to intelligence. Tiebout and Meier<sup>1</sup> recorded a low degree of correlation between tested intelligence and artistic ability below third grade, but this relationship was not maintained at higher levels.

Individual case study techniques were used by Luquet, Buhler, Eng, Perrine, Meier, and Schaefer-Summern. Some of them discussed records of the work of average children and adults, while others commented on that of deviates. Longitudinal studies of individuals engaged in creative work reveal not only the aptitude of the person, but also something of the creator's emotional approach to the subject, his method, and his habits of work.

From the foregoing it is obvious that as yet we are unable from tests to identify the child gifted in the arts, we can, however, note unusually original performance, or unusual concentration, we can, also, give the child opportunities to experiment in his chosen medium of expression.

### The Talented Child and the New Art Education

During the past generation art education emerged from its esoteric isolation. A realm which many regarded as sacred to the few gifted individuals in our culture has suddenly become the proving ground of all. This liberation of the creative spirit has greatly changed the patterns of former pedagogical methods.

The major change has been a matter of a shift in emphasis from the product to the process. No longer are the realistic drawings of skillful children acclaimed because of their apparent similarity to known forms or scenes. Evaluative concepts of this type have been swept out with the old drawing books, and in their place one finds an increasing understanding of the child as a creator.

The young child's nature is dynamic, reflecting patterns of physiological, social, emotional, and intellectual development. Growth in these areas does not always proceed at the same rate,

<sup>1</sup> Carolyn Tiebout and Norman C. Meier, "Artistic Ability and General Intelligence," *Studies in Psychology*, University of Iowa, Vol. II (1933).

and children of equal age within a given culture may differ markedly from one another in one or more patterns of development

Not only the child but the environment in which he lives is characterized by constant change. Unless he feels insecure, the young person is not troubled by the varied panorama presented by the events of daily living. He has a tremendous interest in, and enthusiasm for, the new, the novel, the untried. No barricade separates the real world from that of the imagination. The credulity of childhood gives as much reality to a fairy princess as to an atom bomb.

As the boy or girl investigates the wonders of his real or imaginative child world, he begins to cast about for ways in which to record his feelings or his new knowledge in objective form. His need is for a mode of expression. The inner urge or drive impelling him to action may be called the creative impulse. The child frequently turns to an art medium for expression of this impulse.

Whether his translation is in clay, crayon, or paint, art is language to the child. It is his way of telling, not what he knows, but what he sees in the world around him. Child art differs markedly from that of the adult, for the child knows no formal rules of representation or organization. No color theories disturb the abandon and joyousness of his interpretation. He often records commonplace experiences in the color tones of jewels.

Children of primary age are undaunted in efforts to record the most complex experiences. They picture circuses whose three rings teem with activity on a single sheet of paper, or at other times depict farms complete with houses, barns, people, animals, and farm machinery in a relatively small area. All these forms are delineated swiftly with a few simple strokes. The symbolic character of the young child's work in drawing and in modeling accounts for its charm and directness. The boy or girl has something to say and he says it in chalk, paint, or clay without regard to the mechanics of his expression.

Progressive art teaching has emphasized the subjective character of children's creative art work. For that reason the imaginative or decorative composition of every child is prized by one who understands child art. A higher value is placed on a child's re-

organization and interpretation of experience no matter how crudely drawn than on the realistic rendering of a skillful boy or girl. The latter composition is as impersonal as that recorded in the most factual photograph, the former is the distillation of an experience in the child mind.

Art educators and psychologists have indicated that interest in art tends to diminish at each level as children proceed through the intermediate and upper grades and on to secondary schools. This is certainly true in schools of the old type, but observation of children at work in progressive schools and classes over the past fifteen years leads one to believe that motivation and stimulation of a dynamic sort, together with standards of evaluation devised by the children themselves, have succeeded in retaining the interest of large numbers of young people in creative art production. It is only in schools and classes where child art is not appreciated that a tremendous decline in creativity occurs, in such places only the talented child usually maintains his interest in art although the school may offer little or no stimulation in this area.

In a climate of creativity almost all children can become interested in art or craft production. The stability of this climate depends on the enthusiasm and imagination of the teacher, on her appreciation of the experiences children enjoy translating in chalk, paint, or clay, and on her ability to evaluate the creative work and methods of children in terms which are meaningful.

### Identifying the Child Talented in Art

It is difficult, as has been pointed out, to identify young children gifted in art. This is true, not because of a dearth of art expression from them, but rather because of the abundance of drawings, paintings, and three-dimensional constructions in every kindergarten and classroom where children are encouraged to express themselves creatively.

As children pass from the primary grades, many of them leave behind the magic touchstone of creativity. Without motivation or stimulation they may abandon earlier creative pursuits. It is at this point that the truly talented child can sometimes be identified, for even in an unsympathetic atmosphere, talented children often sustain an interest in art. This persistent interest is often

the means of distinguishing between artistically talented children and the untalented. In drawing and craft work completed at home or in informal sketchbooks evidence of their sustained interest in art may be found.

Interest and ability enable talented students to work at art or craft productions for extended periods of time. One child observed over a ten-year span of time amused herself by drawing and painting for long periods even at the age of four. A sympathetic mother kept paper stretched along three walls of the basement of the child's home and provided a studio corner in which art materials were kept. Whenever the little girl tired of crayon drawing or working at her easel, she could begin or add to a mural painting. Although playing with other children, listening to the radio, and reading were a part of her daily activities, she spent less time on these recreations than other children of her age. It was not until she was six years of age that she began to experiment with clay. Since then she has varied her artistic efforts through the media of pencil, paint, clay, papier mâché, and wood. Today at fourteen, this talented girl plans to continue her art work as a profession, specializing in sculpture.

A commentary on her perseverance is similar to that which one of the writers observed in studying other talented children. All of them enjoyed concentrated effort on art or craft projects which called forth imagination and provided an opportunity for unique solutions to artistic problems. Although talented children expended an exorbitant amount of energy on their creative work, they showed little fatigue. In most instances exhilaration and alertness were found to be stronger at the end of such a period than they were at its beginning.

Gifted children of all ages seem to be more sensitive to sensory stimuli than average children. In drawing and painting, the talented child not only records his experiences in a unique way, but he also makes his creative compositions rich in detail. The casual encounters of everyday life are easily recalled and dramatized in art media. This sense of heightened awareness can be observed in the work habits of talented individuals. Their performance reveals an abundant storehouse of visual images.

The talented young child tends to put a greater number of story elements into his creations. Gifted older children subjected

to informal memory drawing tests reproduced a greater number of identifying factors in any given situation than did those of average art ability. These memory drawings were not always handled realistically. In many instances the distinguishing characteristics of the remembered forms were reproduced in a design.

The talented child's unusual ability to collect sensory images and to store them for future use is usually associated with a vigorous creative imagination. Although all children are potentially creative, and all will produce original art work under competent and sympathetic direction, the quality of creativity varies from child to child. Artistically gifted young people tend to think in terms of visual images and to translate their images into originally designed arrangements.

### Identifying the Child with Creative Writing Ability

While the discussion thus far has tended to emphasize certain of the arts which may be best developed in so-called "art" classes, there are talented children who show special abilities in other creative fields. These include children who are gifted in writing, in music (singing, playing an instrument, or composing) or who express themselves well with the dance or drama.

Schools have been readiest to exploit the capable young writer. His story has often been read or published, and he has received approbation from his classmates. Some schools provide classes for so-called "creative" writing, and frequently national and local prizes are offered.

A word of warning is probably necessary here. The youngster with a sensitive ear finds it easy to imitate the cadences and phrases of the adult writer, and unless the teacher is alert she may be misled and think she has a potential genius when in reality she has merely an excellent imitator. School courses and textbooks also frequently put a premium on using the unusual or unique word, and in consequence produce a kind of showy writing which is most dangerous to the thinking of the young writer, and ultimately to his possible development of style. Writing which seems to indicate special gifts should therefore be examined thoughtfully, but without allowing the youngster to think of himself as unusual. Extension of interests, experimentation if pos-

sible with various art media, wide reading, social participation, and generally good background should be encouraged.

Probably any teacher finding the following poem in the weekly contributions of a fifteen-year-old boy would recognize unusual ability. Examination of the poem would indicate that the wealth of imagery came not from daydreaming or from vocabulary as such, but rather (as is true) from an unusually varied reading and participation in human affairs.

### *Kentucky Mountain Girl*

Clear, etched profile against morning-glory-blue mist.  
 Hair a sweet waterfall, intangibly fluffy as sun-brightened clouds,  
 Yellow as the inmost hearts of daisies, or as the fragrance of store-  
     bought smokes, or as fish swimming near the bottom of a pond.  
 Voice a smooth harp, a happy-warbling mouth organ.  
 Eyes dreams of bubbling lives and unreal deaths of joyful meaning.  
 So was her mother . . . twenty years ago.

In twenty years . . . D'Artagnan killed six men . . . was wounded  
     three times . . . rose like Alexander . . . fell like Lucifer  
     . . . and rose again (a flourish) like D'Artagnan.

Twenty years ago . . .  
 Her lover picked her mountain gooseberries  
 Instead of shocking corn.  
 A clumsy feather in the winds of fate,  
 (The Gods cause winds of fate by shouting while discussing the Mean-  
     ing of It All)  
 Obese and solid, heavy with the weight of hastily born children,  
 Hair the mud-yellow of the baptismal pool after the baptisms . . .  
 (To cleanse the soul you have to soil the water)  
 Eyes deadened with the knowledge of her life, brightened only a little  
     by the certainty  
 Of a dull heaven.  
 An ugly thing.  
 Something a lover of carnal loveliness  
 Would find an ugly horror; standing beside  
 The clear young girl, who may be no more pure  
 And yet is beautiful (what else is needed).

In twenty years . . . Cleopatra wrecked a nation . . . destroyed an  
     army . . . entwined a couple of Caesars . . . died in a min-  
     ute . . . hair a little gray . . .



The high quality of the talented child's creative organizational ability brings up the question of aesthetic judgment. The gifted younger child composes in an original fashion but the pattern of his composition as far as we can determine is largely unconscious. No one has told him about emphasis, subordination, balance, rhythm, or any of the other art principles. His work reveals, however, an awareness and a utilization of these elements as a natural expression of his child personality. He composes more or less intuitively. As the child approaches adolescence he becomes more and more aware of himself as a person and begins to examine his creative products with a new and critical sensitivity. He begins to analyze his speech, actions, and dress as well as those of other members of his group. He looks at his creative products, and if he finds them displeasing he frequently turns away from the work he is doing. At the secondary level and beyond, the application of art judgment tests, such as the Meier Seashore and the McAdory, reveal a positive relationship between aesthetic judgment and an understanding of the principles of composition. Although aesthetic judgment is thought to be a product of experience and learning, studies do not reveal clearly the way in which such judgment develops.

### Identifying the Child with Musical Ability

Along with the other arts the school should recognize and foster talent in music. Too often the emergence of musical talent has been left to chance. The peculiar nature of musical performance, and the largely unpredictable growth of vocal and muscular equipment often make early prognosis difficult. This would probably remain true even though we had much more reliable measuring instruments than now exist. In consequence there is need that teacher and parent be observant, offer enriched opportunities, and encourage experimentation and exploration. The field of music includes much more than performance; we should make abundant use of recordings and radio broadcasts of good and suitable music to develop appreciation.

The obliging young singer or instrumentalist should not be exploited. Willingness to entertain and ability to imitate adult behavior are frequently mistaken for talent. The highly gifted child

should not be misled by attention and false publicity sometimes bestowed by radio programs on children having little talent. As with writing, painting, or sculpture, the best evidence of musical ability lies in a deep concern for, and a persistent interest in, music itself.

Until recently our schools have encouraged singing and have neglected other phases of music, recently opportunities to play instruments and to hear good music have been added to the curriculum in many schools. We are beginning to understand that enjoyment of music, whether through hearing or producing, should not be limited to those who can afford to pay for special education. And we are beginning to appreciate the significance of early identification of the gifted child and the necessity of offering appropriate opportunity for the expression and development of ability.

### Need for Provision of Experiences in All the Arts

Frequently children gifted in graphic or plastic arts, in music, drama, or written expression, are also gifted in other areas of experience. The high school student who does unusual work in painting, writing, or sculpture may later succeed in medicine, science, economics, or philosophy. It is clear also that whether from native structure, environmental stimulation, or a combination of both, some children show unusual ability and interest in various art fields at an early age. These children may, if encouraged, make outstanding contributions and find great personal satisfaction in the arts. Examples of great musicians who early showed aptitude will readily come to mind. This consideration leads one to conclude that we should, from the early years, offer the talented child an abundant opportunity to explore, to do intensive work, and to find approval for his endeavor.

Until our schools recognize that every child should have opportunity to explore, work in his chosen medium, and find approval for achievement, it may be that the special class or curriculum will prove the best we can offer children with unusual gifts. There is danger, however, that emphasis in a limited field which offers immediate satisfaction may channel interests before the child has explored various forms of expression in art. We have therefore

the responsibility of providing these children with varied experiences in many areas as well as direction in their special field. The gifted young writer needs much experience before he can write for any but a juvenile audience. So too, the actor, the painter, or the sculptor needs broad and varied experiences. The child with artistic talent does not, therefore, offer a new problem to us, instead he reflects the general need of all children to search widely, to test themselves with many materials, and to proceed in the use of mind and hand with happiness and confidence.

## Chapter Thirteen

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## ADMINISTRATIVE PROBLEMS IN EDUCATING

### GIFTED CHILDREN

If a child is hungry, we give him food. In a formal way, we say his need is satisfied by food, especially, of course, the right kind of food.

To determine the kinds of educational food that will satisfy gifted children one must seek an answer to the question: What are the needs of the gifted? With the discovery of their needs we can search for and create for them the best kinds of experiences and activities, in other words, the best education for their maximum development.

The first and obvious answer is that gifted children need what all children need — love and care and understanding, so that their emotions as well as their intellects may be nurtured. They need also the capacity to live with others, to solve their problems and conflicts in constructive, positive ways. They need the tools of learning, the skills required for living in this complicated framework that is the world today. And they need some creative drives to give meaning and purpose to their lives so that their existence

on the earth will not have been in vain. These are the needs of all children, the gifted included. Any program planned by the administration must be conducive to these needs, must foster and assure them.

We must remember that the focus of education is upon living children, whose development as human beings is our first responsibility. This requires a basic attitude to be present in every learning situation, in every classroom, every day — the recognition that every child is always an individual, and at the same time a member of a group. We do not develop as individuals at one moment, and as members of society at another, any more than our bodies function at one moment, our minds at another. This concept of the unitary nature of experience and, therefore, of learning is a major contribution of modern biology and psychology to our knowledge. It must be accepted and incorporated into our programs when administrators create designs for education which will satisfy the needs of all children and especially those who are gifted.

Any program, then, just as any classroom, must make provision for group participation and, at the same time, take into account individual differences. This is a big order, but its magnitude must not deter us from trying to provide for maximum individual growth in group situations. It is of course insufficient for a pupil merely to be a physical member of a group. He must take part in planning, exchanging ideas, sharing experiences, giving and taking — in other words, he must grow in the ability to become a member of the world society which is emerging. In such a framework individuals can learn to contribute to the highest level of their capacity, the gifted more abundantly out of their more favored heritage. Thus it is really out of the recognition and acceptance of children as individuals, as well as members of a group, that the search for satisfying the needs of the gifted begins.

Thus important administrative problems appear. What size of class can provide for the needs of all the pupils in it, including the gifted? And what kinds of programs can be directed toward all — the limited, the average, and the gifted?

In present classroom practice the tendency is to set the teaching techniques to satisfy the average child, ignoring both the limited and the gifted. This is especially true in the high schools

of our country. With the increase in enrollment, the curriculum has been steadily adjusted to meet the needs of average American youth. The result is a leveling down of standards.

In classrooms or school systems which appeal to the average child, the gifted mark time or get into mischief and difficulty from sheer boredom.

"Read that story over again, Johnny. You could not have understood it if you read it so fast," is the too frequent remark to the gifted child. Perhaps the teacher does not know that Johnny is at least a year above his grade in reading ability. Johnny, who has absorbed all there is in the story, either rebels or engages in unapproved behavior. Such a situation results in a serious waste of talent. The discovery and development of gifted children is a major responsibility of all who are concerned with America's future leadership.

### Administrative Devices

Since other chapters are devoted to the problems of discovery and identification of gifted children, this discussion will be limited to instructional procedures and administrative problems.

### Acceleration

One of the most common ways to deal with the gifted child is to advance him rapidly from grade to grade. Skipping implies that the child skips over the work of one grade and is moved into another one without having completed certain work. Acceleration means the moving of a child from one level of instruction to another, but only after he has mastered the work of the level from which he is moving. Acceleration is possible only when the classroom instruction is sufficiently differentiated to permit one child to proceed ahead of the group. Judging from some of the arguments presented against acceleration, it would appear that many of the writers have in mind the process of skipping when they refer to acceleration.

Much controversy has gone on about the advantages and disadvantages of acceleration. This has to do chiefly with the recognition of the social and emotional, as well as the intellectual values in the child's development. Terman's opinion is as follows.

"If the gifted child's intellectual welfare were the sole criterion, then promotion ought to be based primarily on mental age, since it is the factor that chiefly determines the intellectual difficulty of the school tasks one is able to master . . . The question is, how much risk of maladjustment one can afford to take in order to keep the gifted child at school tasks difficult enough to command his attention and respect. The data here reviewed indicate that the risk of maladjustment is less than is commonly believed."<sup>1</sup> His conclusion is that "No universal law can be laid down governing the amount of acceleration desirable. Some gifted children are less injured by acceleration of three or four years than others by one or two years . . . It is our opinion that children of a 135 IQ or higher should be promoted sufficiently to permit college entrance by the age of seventeen at the latest, and that a majority in a group would be better off to enter college at sixteen."<sup>2</sup> Further studies made by Witty, Pressey, Keys, Hollingworth, and others seem to support the position taken by Terman.

These convictions are not shared by school administrators, however. In a survey made by the Research Division of the National Education Association<sup>3</sup> only 15 per cent of the junior and senior high school principals believed that pupils of superior ability should complete the school curriculum in less time than the average. It is not clear on what basis this overwhelming decision against acceleration is based. Perhaps it is the picture of the brilliant but unhappy sixteen-year-old at college, who is regarded as "queer" by his classmates.

The practice of acceleration raises questions which require more extensive research before further conclusions can be drawn. At which level shall a child be accelerated? It is the thought of some administrators that with early identification of the gifted (at the ages of four and five) they can be permitted to complete in one year, perhaps before the age of six, both the kindergarten

and first grade. The argument given for this practice is that they will immediately be challenged by their first school experiences and thus avoid the danger of boredom and careless habits of work.

It might be argued, however, that unless there is a number large enough to form a whole group of such children, the few who are advanced will be out of place. Young five-year olds in a first grade will certainly find the older and physically stronger boys and girls overpowering, in spite of the five-year olds being more intellectually advanced than the others. Perhaps in the middle elementary grades the age differences will not seem so sharp as at the earlier levels, and here acceleration may not create such problems of difference in outlook and behavior in the group, but the adolescent years again present problems brought about by the onset of physical and emotional change. If preadolescents, no matter how intelligent, associate continuously with older boys and girls, they usually experience frustration or unhappiness. One such boy remarked, "I don't know why I was invited to that party. They know I don't like girls." This boy, like many others, displayed a typical reaction to members of the opposite sex.

This illustration makes clear one of the limitations of acceleration when used with gifted children. Acceleration, which is quantitative in character, leads to problems of emotional and social adjustment. This disadvantage has caused many educators to seek other ways to meet the needs of gifted pupils.

### *Segregation*

Some large school systems segregate gifted children. Special classes have been created for them, apart from the regular groups. In these classes may be found pupils of high IQ's or of similar achievement in subject or grades, each group is fairly homogeneous according to a chosen criterion.

The results of studies of segregation are not consistent. In one experiment with sixteen boys and girls, it was found that their scores on achievement tests were only slightly higher than those of a control group. By more subjective standards, however, they were found to be "higher" in initiative, self assurance, tenacity, and other traits involving emotional and social growth. Other



studies have yielded somewhat different findings. Specialists in psychology, however, seem to favor classes for the gifted in the elementary school and mildly support the practice in the junior high school.

Sufficient data are not available to warrant an unqualified endorsement of segregation, since the practice is of fairly recent origin and experimental data are inconclusive. Do special classes produce pupils who are conceited? Does the gifted pupil overwork in the special class? Does he become socially maladjusted or inadequate as a result of failure to mingle satisfactorily with his peers?

Segregation thus presents special problems for experimentation and study. The most significant is that of the program itself, for if some pupils are separated from others, there arises the task of creating a special curriculum for them. With their superior endowment, whether it be in intelligence revealed by unusual vocabulary, in high abstract or analytical ability, in imagination, social awareness, special talent, manual dexterity, or in all of these qualities, such children must be provided with a program that is stimulating and challenging so that the whole self of each child can be developed every step of the way. This recognition of the need for a curriculum broadened to include all phases of a child's growth has led to efforts to extend the school program beyond its present limited scope.

### *Enrichment*

The concept of enrichment arises from the fact that the usual educational fare is not satisfying, perhaps too meager for inquiring minds with insatiable curiosity and lively interest in living and learning. It is, perhaps, out of the demands of the gifted themselves for more and better education that awareness of their needs has developed. When there is readiness to learn at a greater speed and at a higher level, the teacher and administrator must search for new content and new activity. More of the same is not the answer to the problem of enrichment.

In one study fifteen gifted boys and girls were invited to discuss their interests, all of them expressed the desire to study science. Most of them wished for more time for unscheduled activity in order that they might engage in "research." They wanted more

field trips, too. In short, they were expressing their own needs for enrichment.

With such pressure often coming from the pupils themselves, the curriculum of some schools is being modified in various ways — by the addition of subject matter, by adjustments in time schedules, by assignment of special teachers, and by other changes designed to enrich the program for children of promise.

## Teaching Procedures

Among the suggestions offered is a change in approach, a shift to less formal and traditional methods within the classroom. In some schools administrator and staff plan, in the lower grades, a program which provides varied reading materials for these children. Sometimes one finds a tendency to encourage the reading of such children to a point where the content demands understanding beyond their experience. This procedure leads some gifted children to spend time on reading to the exclusion of the "raw materials of living." Failure to participate in the many affairs of childhood may prevent these pupils from achieving wholesome development. In arithmetic, also, concepts and processes should be developed out of the activities of the group, and the same is true of spelling and of creative writing. These activities keep children at their experiential levels, yielding a richness at each stage of growth.

On the other hand, care must be taken that repetition does not deteriorate into routine assignments which require little effort. Nothing has less appeal to the gifted child and is more wasteful than the assignment of five extra problems or ten additional spelling words. He understands the processes and does not need such repetition.

Caution must be exercised in the kind and amount of additional work assigned to the gifted. Teachers often allocate to them the menial tasks — running errands and distributing materials — since the gifted complete their work sooner than other members of the class. The following question should be asked in assigning tasks to gifted pupils. Are the activities designed to develop the powers of the gifted or are they wasteful of time and energy?

If there is a special assignment, it must be an activity which

appeals to students' imagination and insight, for these are often the gifts which should be nurtured and developed. A high degree of imaginative work and logical thinking can be expected of these children.

### *Contracts*

In some schools the materials of study are organized into "contracts" which pupils can fulfill at their own rate for a certain period. They meet for group participation when a certain amount has been "covered." Such a plan is regarded as effective in developing good study habits. There are various types of contracts, confined chiefly to the skills subjects — arithmetic, spelling, and composition — but often including history, geography, and the other social studies. In these the time limit is set so that "working ahead," the bane of the teacher, is precluded, but the amount of subject matter is definitely expanded.

Those who sponsor the contract plan believe that boys and girls take pride in such work. The pupils keep accurate records and strive for improvement. The contracts become also enrichment media through which factual data of the content subjects can be mastered.

As in the programs of acceleration and segregation, that of enrichment presents unique problems. Contracts must be continually revised to fit changing content and the changing needs of different groups. The actual typing, mimeographing, and other details of preparing the materials is expensive and time-consuming, perhaps, in some instances, out of proportion to the values to be achieved. The correction of each contract and the help needed for individualized aid to pupils raises questions of efficiency of procedure, of time, and again, of the size of the class and the number of persons involved with each group.

Perhaps most important of all is the motivation of each student's endeavor to carry out his own purposes and achieve worthy outcomes, he will not do so through contract assignments, prepared and assigned by adults. If he simply fulfills contracts, his attitude may be "I have finished my geography contract" instead of "I have a map to show." To be really effective, the purpose of learning should be in the mind of the learner as well as in that of the teacher.

## *Units of Work*

In still other schools the administrator and his staff select centers of interest, called units of work, which become the focus for the school program. In these plans a wide variety of activities are included. Among them are trips to points of interest, research and study in the library, experiments in science, painting and drawing, dancing and singing — all centered around a theme. As one administrator has said: "These are the ideal media for teaching the democratic processes, of sharing, of working and living together in harmony through an ever increasing awareness of and growth in appreciating how individual differences may be utilized and can contribute to the good of the organic whole."

"These hours of cooperative work on the year's unit afford the teacher exceptional opportunities to explore the talents, hobbies, and interests of the individuals in the group. Here latent potentialities, gifts wholly unsuspected, suddenly reveal themselves to the discerning teacher and give her a unique chance for guiding the child and his parents to a wise development of talents for satisfactions in the child's own life and for the good of society."

"These are the times, also, when inhibitions are least evident and personality traits, desirable and otherwise, come to the fore. Again, the sensitive teacher observes such revealing characteristics and coöperates with both child and parents to insure development of growth and behavior patterns consonant with potentialities and consistent with democratic living of the highest order. When units of work have so much educational worth, the adjustment to make these an integral part of the curriculum is a 'must.' And having made the adjustments, the administrator can hope that his vision of conserving those who, because of their gifts, can serve their country best, will become a reality."

The unit-of-work approach cannot be successful, however, unless teachers are skilful and resourceful, for it requires a competence which the teacher who first assigns pages or chapters and then checks in a question and answer recitation, does not recognize or possess. The unit-of-work approach requires creative and original endeavor, moreover, it fails if the teacher does not seek to provide common experiences — and at the same time, to offer challenging individual endeavor.

## The Teacher the Crux of the Problem

In carrying out any of these programs, the administrator must rely upon the classroom teacher. Moreover, the value of any administrative device depends upon the day by day experiences with the pupils in the classroom. Inspiration may come from administrators in stimulating teachers to enrich children's experiences. Help can also be provided by administrators in establishing sizes of classes commensurate with individual as well as group attention, in obtaining adequate resources and materials of instruction, in eliminating fears created by false incentives, and in serving as a buffer between the public and the teachers when highly controversial issues arise. Encouragement and understanding can inspire teachers to exert their best efforts, but in most schools the ultimate success of educational endeavor depends upon the teacher.

Teachers of gifted children should display unusual sensitivity in recognizing the potentialities of such pupils, they should maintain a balance between individual and group work in the classroom, they should help pupils solve problems and resolve conflicts, they should aid pupils in mastering the knowledge needed for understanding themselves and the world, and they should display a sincere interest which will inspire confidence.

It is to be hoped that more of our highly endowed youth will enter the profession of teaching. Then education will become to a greater extent a challenge to the gifted children and youth of our country. To awaken such an interest in the career of teaching is indeed a challenge to every administrator.

**THE EDUCATION OF GIFTED CHILDREN AND YOUTH—  
SUMMARY AND  
RECOMMENDATIONS**

In recent years educators have stressed the significance of the developmental approach in education. Education is looked upon as a process which seeks the maximum development of every boy and girl according to his unique nature and his needs. This concept is in harmony with the democratic ideal, since, in a true democracy, each citizen contributes to the common welfare to the extent of his ability. To enable every person to make his greatest contribution, suitable educational opportunities should be provided.

Educators are awakening to the fact that gifted children in our schools have too often been neglected. These children have seldom been adequately challenged to develop their superior abilities. Although special funds have been appropriated for the education of the mentally and physically handicapped pupil, little or no special provision has been made for the gifted. As a result, children of superior mental ability are often "left to develop their own skills in their own way and in terms of personal initiative alone."<sup>1</sup> In spite of this situation, some gifted pupils are able to make progress in desirable ways. Others, however, as

<sup>1</sup> Catherine C. Miles. *Gifted Children*. *Manual of Child Psychology*, edited by Leonard Carmichael (New York: John Wiley and Sons, Inc., 1946), p. 931.

Terman reports, "are more or less exhausted by the struggle and fall by the way"<sup>2</sup>

### Neglect of the Gifted

In some classes, teachers are offering unusual opportunities for the gifted pupil. However, the surveys presented in Chapter Nine show that scarcely a beginning has been made in caring for the gifted. There are, of course, many reasons for the neglect of the most able pupils. Among these reasons is the indifference of too large a number of administrators and teachers to the problem presented by gifted pupils. Although a small number of administrators and some teachers recognize the desirability of devising curricula sufficiently comprehensive to challenge these pupils, many others fail to understand and appreciate the role of gifted persons in social welfare. Yet it is generally recognized that the preservation and advancement of civilization depends to a large extent upon contributions made by gifted individuals.<sup>3</sup> Several studies cited in this book show that there is a regrettable waste of gifted persons in many phases of American life.

Gifted pupils, in order to develop according to their potentialities, require continuous stimulation and adequate opportunity. Such conditions are rarely found in our schools. It is estimated that in many states not more than 50 per cent of the total number of gifted pupils who graduate from high school go on to college. Moreover, probably a third or more of gifted young people leave school with an inadequate amount of education to qualify them for the best use of their abilities.

We need, in the United States, men and women of superior ability as leaders in business, education, journalism, labor, scientific research, and government. Not only do the gifted require appropriate educational opportunities, but they need also guidance and encouragement in order to enter challenging and acceptable occupations. Studies of gifted youth reveal that large numbers of them enter occupations that do not require superior intelligence. It should be recognized that superior ability alone

<sup>2</sup> *Ibid.*

<sup>3</sup> Educational Policies Commission of the National Education Association of the United States and the American Association of School Administrators, *Education of the Gifted* (Washington, D.C.: National Education Association, 1950), p. 31.

is insufficient to qualify individuals for outstanding accomplishment or leadership. Training is required in accord with the responsibilities of various types of endeavor. In addition, the gifted should have training in the development of desirable character traits and in the appreciation of social responsibility. Leadership by properly prepared gifted persons is necessary to enable the United States to grow in stature and influence as a world power.

The studies presented in this book show that we are wasting the ability and talent of countless youth. To remedy this situation, we need not only the constructive endeavor of school people, but also the cooperation of informed citizens generally in a concerted effort to conserve ability and talent. As stated by the Educational Policies Commission:

To cope adequately with the problem of talent waste in American life today will require action by nearly every organized group, institution, and individual in American life. But the schools and colleges must play a central role. That role involves not only the remedying of educational deficiencies, but a counterattack upon the economic, social, and psychological forces that now operate in every phase of life—more outside the school than in it—to dissipate and divert the nation's human resources.<sup>4</sup>

A democracy cannot afford to neglect and waste its gifted youth.

### Early Identification and Guidance of the Gifted

Research workers generally agree that plans should be made to identify the gifted child early in order that a long-term program of education may be planned. This program should begin in the home and should include adequate and continuous counseling after the child enters school. Guidance is frequently necessary if the gifted pupil is to become a well adjusted, happy, and successful personality.

Investigations reveal that gifted children typically are above the average in personality development. They are seldom the eccentric misfits that traditional thought sometimes pictures them. However, the studies reviewed in this book suggest that at least one out of four or five displays minor personality problems, and that perhaps one out of twenty presents a serious case of malad-

<sup>4</sup> *Ibid.*, p. 31



justment. The frequency of such disorders appears to be even greater among children of the highest intellect — above IQ 180

The gifted individual tends, because of his outstanding capacities, wide range of interests and activities — to meet his environment at more points and with greater sensitivity than normal children. This gives rise to a number of conflicts, some of which are not normally resolved.<sup>5</sup>

When basic human needs are not fulfilled, children often resort to undesirable methods of obtaining gratification. The maladjustments of gifted children, like those of other children, arise from the lack of fulfillment of needs. Strang presents in her chapter on mental health in this book a number of examples of gifted children who, failing to find such satisfactions, turn to undesirable forms of behavior. Others become emotionally maladjusted, ineffectual, or unhappy. Under these circumstances, gifted children usually fail to develop or express their abilities and fulfill their promise. Such outcomes are especially unfortunate because undeveloped talent is a great social waste and because misdirected effort of gifted individuals may prove socially menacing or disastrous.

There is a great need for more effective counsel and guidance of gifted children and youth. Some gifted pupils flounder aimlessly because they have never been challenged. Others languish in idleness because they have never been given an opportunity to appreciate the social usefulness of their talents and their own responsibility for developing their ability. A program of early identification of the gifted, followed by skillful counseling and guidance, is needed if we are to conserve ability and talent.

It is important, too, for parents and teachers to recognize that a child may be considered gifted in art, music, and other creative pursuits as well as in abstract or verbal intelligence. Perhaps it would be well to enlarge our concept of giftedness to include all children whose performance in worthwhile types of endeavor is consistently remarkable. Encouragement and guidance should be given to such children by parents and teachers in order that these children may realize their promise.

## Importance of Home Background and Parent Education

The importance of favorable home conditions in fostering growth is indicated by several studies of the gifted. In one investigation, an interesting comparison was made of the most successful with the least successful of 600 gifted youth.<sup>6</sup> Three judges rated their success in terms of the extent to which native endowment had been employed. The authors conclude:

The successful group had generally the more satisfactory family background in terms of occupational status, marriage permanence, parental education, equality of the home, home instruction, and mental stock as indicated by higher sibling IQ and by fewer cases of abnormality in the relatives . . . Parents and teachers had been able to discern in the successful gifted at a fairly young age slightly more favorable intellectual, social, moral, emotional, and especially volitional traits. The successful or A group was slightly more accelerated in school . . .

Expression and growth are blocked in some gifted children by strong emotion or by insecurity traceable to deprivations at home. There are many children whose abilities in art, music, or writing, though rare and distinctive, are undeveloped because of unfavorable home conditions. Gifted children, like all others, need security, affection, and encouragement at home in order to develop sturdily. Recognition of ability and praise extended by sympathetic parents often prove strong incentives for the expression and development of gifts.

One of the greatest needs of some parents is an understanding of the social and emotional growth of gifted children. Frequently, the social development of the gifted child does not keep pace with his rapid mental growth. For example, a gifted child of five may display the mental ability of an eight- or nine-year-old child. Physically he may be somewhat superior to other five-year-old children, but he may be by no means so well developed as children two or three years older. His social development, too, may be somewhat accelerated, but not in proportion to his mental growth. This condition accounts in some cases for the bright child's understanding of such words as *cooperation* and *loyalty*.

<sup>6</sup> Lewis M. Terman and Melita H. Oden, "Correlates of Adult Achievement in the California Gifted Group," *Thirty-Ninth Yearbook of the National Society for the Study of Education, Part I, Intelligence: Its Nature and Nurture* (Bloomington, Illinois: Public School Publishing Company, 1940), pp. 74-89.

and his inconsistent behavior with regard to these traits. Parents should anticipate the gifted child's need for varied experiences that will enable him to translate his knowledge into action. Patient guidance and wise counsel should be practiced by the parent in fostering social understanding and personal adjustment in gifted children.

Another need of the parent involves a clear understanding of the meaning of the results of intelligence tests. Parents sometimes attach too much significance to test results. It is unwise to regard a high IQ as proof of genius. Genius is a product of many factors, some of them — emotional development, drive, temperament, and talent — are difficult to measure. It is unwise, however, to disregard the results of tests and to discount their value in the identification of the gifted child.

What the intelligence test can do is to enable us to recognize, very early in the child's life, abilities that lead to valuable contributions to society. Before reaching a more general conclusion about any gifted child, we must study his IQ in relation to data concerning his physical, mental, emotional, and social development. So used, the test result is of great value. No more should be expected of it.

### Conserving Abilities and Gifts in the Elementary School

We have seen that failure to recognize the gifted child is a result of a number of forces. Among these factors is the traditional attitude — which has been to regard the gifted child as peculiar, eccentric, or queer. The results of such thinking are far reaching. Bright and talented children are sometimes shunned, occasionally they are looked upon with jealousy, or even hostility. In school, some gifted children, responsive to the attitudes of others, hesitate to reveal their abilities.

It is to be hoped that a renewed interest in the bright and the gifted will attend a widespread dissemination of the facts concerning children of very high IQ's whose growth and development have been studied over a period of twenty-five years. The facts about the educational progress and needs of the gifted child should be widely known. It has been found that the general educational growth of the gifted child progresses at such a rapid rate

that in the upper elementary school he has knowledges which surpass those of children classified two or three grades above him. Almost every study shows that gifted children are offered little that is mentally or educationally provocative by the subject matter of their grades.

The studies and surveys presented in this book make it clear that the typical elementary school provides a too meager and too restricted curriculum for the gifted. In many schools, the abilities of gifted children are unrecognized; and in others, they are unchallenged or neglected.

Most educators stress the desirability of offering such pupils broad and diversified educational opportunities. Some recommend widespread adoption of acceleration. Grade-skipping should be looked upon only as a temporary expedient and partial solution to the problem of caring for the gifted. However, a moderate amount of acceleration, as shown in several chapters of this book, is not usually attended by undesirable effects upon the pupil.

Enrichment, too, is indispensable in the education of the gifted. Yet in three decades surprisingly few enrichment programs have been developed in our schools. At the present time there is a renewed interest in the formation of special classes and schools in which enrichment of experience is planned for gifted pupils.

Several studies presented in this book suggest that special classes for the gifted provide opportunities that are associated with salutary development. Since the educational outcomes of such classes have not been fully evaluated, it is impossible to pass final judgment upon the wisdom of this type of segregation. At best, such provisions could probably care for only a small proportion of the nation's gifted children.

The manner of providing enrichment of education for gifted children will perhaps become a local responsibility in every school system. In large cities, it may be feasible and desirable to group the gifted for instruction; in smaller communities the gifted child may be given an enriched program in regular classrooms supplemented by individual instruction and guidance. Close cooperation with the home should help to assure the most wholesome growth of the gifted child throughout the elementary school.

## The Gifted Pupil in the Secondary School and College

Studies show that the neglect of the gifted pupil in the secondary school is even greater than in the elementary school. Although gifted pupils do, as a group, make satisfactory marks in high school, some "languish in idleness" throughout the four years and fail to develop the ambition or work habits essential for profitable college careers. That many gifted students are not challenged adequately by their college courses, too, is suggested by studies of the educational status of the gifted youth in college. L. M. Terman reports that the overlapping of educational attainment, objectively measured, is so great that in certain colleges about 20 per cent of the gifted Sophomores and 15 per cent of the gifted Freshmen reach or exceed the median scores of Seniors. Reasonably, he proposes that we "quit accrediting college courses and credit instead the individual student."

The need for more adequate stimulation and guidance of the gifted throughout college and in graduate schools is suggested by some recent studies by C. Gilbert Wrenn. This investigator reports a follow-up of the top 16 per cent of a group of 1938 Minnesota high school graduates.<sup>8</sup> Nine years after high school graduation, "only 45 per cent (of this top group) had received baccalaureate degrees, and 8 per cent had earned advanced degrees. In approximate figures, only 4 per cent of the high school graduates with IQs of 125 and above had earned advanced degrees."<sup>9</sup> Educators are convinced that more effective counseling and guidance of gifted students in college would motivate larger numbers to continue advanced study in fields for which their abilities so admirably qualify them.

Not only is there a concern on the part of educators for identifying the gifted and encouraging them in larger numbers to prepare for positions of leadership in science, education, and other fields wherein training beyond the baccalaureate degree is essential, but there is also an increased awareness that many gifted pupils need financial aid to carry on advanced work in school. It has

been pointed out that half of the estimated number of gifted high school graduates in many states fail to go to college. Moreover, a considerable number of gifted pupils drop out of college.

Increasingly, educators are recognizing the close relationship between the amount of education a pupil receives and the economic status of the pupil's parents. The authors of the booklet "Who Shall Be Educated?" show the significance of economic factors in determining whether a pupil goes to college. They quote one investigation of the post-high school careers of 1023 graduates of the Milwaukee schools. Two years after graduation all pupils whose IQ's had been 117 or higher were identified. Ninety-four per cent of the students whose fathers earned \$5000 or more per year were in college, 73 per cent of the pupils from homes where incomes exceeded \$3000 yearly went on to college, while only 44 per cent of the students whose fathers earned \$2000 or over were enrolled in college.<sup>10</sup> It is clear from such studies that subsidies, scholarships, and fellowships are needed by many gifted high school and college students to continue their education. Encouragement and guidance are also needed by students in college in order that they may develop fully.

### Concluding Statement

Educators at all levels of instruction must divest themselves of the belief that gifted students can get along by themselves and that it is undemocratic to give them special education suited to their particular needs. And we must also dispel the fear sometimes expressed that the gifted may become selfish through too much consideration, for "it is precisely this group of individuals of great ability who, in the long run and as a group, will be the least selfish, the least likely to monopolize the good things in this world, and by their inventions and discoveries, by their creative work in the arts, by their contributions to government and social reform, by their activities in all fields, will in the future help humanity in its groping struggle upward toward a better civilization."<sup>11</sup>

<sup>10</sup> W. Lloyd Warner, Robert J. Havighurst, and Martin B. Loeb. *Who Shall Be Educated? The Challenge of Unequal Opportunity* (New York: Harper and Brothers, 1944). Quoted by Wrenn (8).

<sup>11</sup> Rudolph Pintner, "Superior Ability," *Teachers College Record*, Vol. XLII (February, 1941), p. 419.

It appears that one way of advancing social welfare is to provide educational opportunities for all gifted pupils in accordance with their ability and promise. Such a program would necessitate early identification of gifted children and continuous study and guidance of them throughout their home and school careers. For some of them, it would require the provision of scholarships in order that they might complete high school or college. For others, it would necessitate subsequent guidance and aid so that they might in larger numbers acquire specialized training and graduate degrees — thus receiving the special preparation needed for outstanding accomplishment in science and other areas so important to the advancement and welfare of modern society. It is to be hoped that the future will bring a general dissemination of information concerning the nature and the needs of the gifted and a widespread effort to offer them the opportunities in the home, the school, and the community that will result in the conservation of our nation's greatest resource — gifted and talented children.

## ANNOTATED BIBLIOGRAPHY ON GIFTED CHILDREN

Since this is the first volume published by the American Association for Gifted Children, it seems appropriate that the bibliography should constitute a comprehensive source list of references on the gifted. This bibliography, therefore, includes both materials recently published and earlier publications. Books and periodical articles presenting various points of view and varying practices are included. For purposes of organization, the bibliography is classified under six headings. Although the entries in the respective areas are not mutually exclusive, the classification can be used as a general guide for locating material in a particular field. The student wishing to make an exhaustive study of any of the areas, however, should scrutinize also the entries included under other headings for reference to his subject of interest.

### General or Over-all Considerations

ADAMS, FAY, and BROWN, WALKER *Teaching the Bright Pupil*. New York, Henry Holt & Co., 1930. 249 p.

A manual of practical suggestions for adjusting the work of the secondary school to the interests and needs of bright pupils. Includes in its classification of "bright pupils" the upper 20 per cent of the school population, with intelligence quotients of 110 or above. Considers administrative problems and teaching methods. Gives concrete suggestions for enrichment in each of the fields of subject matter taught in junior and senior high school. Bibliography.



BENTLEY, JOHN EDWARD *Superior Children*. New York, W. W. Norton and Company, 1937. 331 p

A comprehensive treatise on the physiological, psychological, and social development of gifted children. Treats of objectives in their education, methods followed, and desirable progress. Appendices give examples of enriched teaching units. Bibliography.

"The Bright Child" *Understanding the Child*, 2 1-21, June 1932.

The entire issue of the magazine is given to the consideration of the bright child. Articles presented include the following: What Is the Bright Child? The Bright Child as a School Problem, Guidance of the Bright Child in the Grades, Educational Guidance of the Bright Child in the High School, Teaching the Bright Child.

BUTTS, R. FREEMAN "Education of the Gifted at the College Level." *Teachers College Record*, 43 35-48, October 1941.

Summarizes and evaluates the proceedings of the Conference on Education for the Gifted held in December 1940 at Teachers College, Columbia University, in honor of Professor Leta S. Hollingworth. The discussions are presented under the topics: Gifted for What? Shall the Gifted Be Segregated? What Kind of Curriculum for the Gifted? How Finance Education for the Gifted?

CARROLL, HERBERT A. "Intellectually Gifted Children, Their Characteristics and Problems." *Teachers College Record*, 42 212-27, December 1940.

Designates as "intellectually gifted children" those who appear once in a hundred times, setting the critical point at the 99th percentile with respect to abstract intelligence. Among the topics discussed are identification, constancy of mental status, capacity versus achievement, heredity and environment, physical equipment, health, social adjustments, and educational problems. Reviews the findings to date in these directions and points out desirable curriculum principles.

CONNOR, WILLIAM L. "The Education of Gifted and Talented Children." *Phi Delta Kappan*, 23.72-76, October 1940

Reviews the major studies of gifted children, points out their problems in an ordinary school situation, and outlines a plan of education for gifted children in operation in Allentown, Pennsylvania. Holds that philosophy, research, and practice must go hand in hand in order to achieve satisfying results.

EADS, LAURA K., and BRISTOW, WILLIAM H. *The Education of Superior Children*. New York, Board of Education of the City of New York, Bureau of Reference, Research and Statistics, Division of Curriculum Research, 1945. 39 p. (Curriculum Division Bulletin No. 3)

Prepared in the form of questions and answers, with appropriate reference material, to consider the identification of superior children, their characteristics, and their educational needs. Based upon research carried on in New York City and elsewhere

"Education for the Gifted" *Teachers College Record*, 42, 375-460, February 1941.

Presents some of the addresses delivered, and issues and problems raised at the Conference on Education for the Gifted held under the auspices of Teachers College, Columbia University, December 13 and 14, 1940, in honor of Leta S. Hollingworth. Titles of articles: The Importance of Social Capillarity, The Place of the Gifted in Industry and Business, The Place of the Gifted in Modern Life from the Viewpoint of Labor, Education's Role in Developing Leadership, Problems in Identification, Description, and Development of the Gifted, Superior Ability, Gifted Children in Small Cities, Administrative Problems in the Education of the Gifted, Some Issues and Problems Raised in the Seminars

"The Education of Gifted Children in Secondary Schools" *Journal of Educational Sociology*, 13, 65-128, October 1939

The entire issue is given to the consideration of problems and programs for gifted high school students. Includes: Educating the Elite in Europe, Educational Suggestions from Follow up Studies of Intellectually Gifted Children, Problems of Relationship between Elementary and Secondary Schools, Education for Gifted Pupils in Secondary Schools of Los Angeles, Educating the Superior Student in the High Schools of New York City, Report of Evaluating Committee on the Education of Gifted Children in Secondary Schools. Authors include Terman, Hollingworth, Arthur Gould, Hymen Alpern, and Walter Kotschnig. Edited by Harvey W. Zorbaugh.

"The Gifted Child" *Understanding the Child*, 17, 33-84, April 1948

The entire issue of the magazine is devoted to problems of understanding the gifted child and was prepared in collaboration with the American Association for Gifted Children. Contains articles on research, special problems, clinical studies, and other topics. Bibliography.

"Gifted and Talented Children" *Journal of Educational Sociology*, 10, 65-108, October 1936

Entire number devoted to subject. Includes: "Gifted Child in Art," Florence Cane, "Gifted Child in Music," Hazel M. Stanton, "Terman Classes in Public School 500," Leta S. Hollingworth, "Clinical Problems of Bright Children," Florence Mateer, "Salvaging Our Gifted Children," Harvey W. Zorbaugh and Rhea K. Boardman, "Social

Psychiatry and Physical Disability," Leon Reznikoff and Lillian Glass. Edited by Harvey W. Zorbaugh.

GODDARD, HENRY H "The Gifted Child." *Journal of Educational Sociology*, 6.354-61, February 1933.

Sets forth the problem of the gifted child, the need of special training, and the extent of provisions being made to that end. Based on report of White House Conference on Child Health and Protection, held in 1930.

HOLLINGWORTH, LETA S *Gifted Children Their Nature and Nurture* New York, The Macmillan Company, 1926 374 p

One of the authoritative publications on gifted children. Discusses the psychology of gifted children, the need of careful education, the importance of proper training to the democracy of civilization. Presents the information which a teacher would wish to possess.

— *Special Talents and Defects*. New York, The Macmillan Company, 1923 216 p

Presents the author's views regarding the significance to education of special aptitudes among children. Admits the exploratory nature of the data and deductions drawn. Holds that "in rare cases there may be complete discrepancy in rank between performance in one task and performance in other tasks, with equal training."

KASEFF, L. *Educação dos Super-Normais* (Education of the Super-Normal). Rio de Janeiro, J. K. de Oliveira, 1931 300 p

The book is based on work done with brilliant students from the elementary classes in the State of Rio. It considers the physiology, psychology, pedagogy, and sociology of the supernormal, and refutes the objections against specialized education of well-endowed children.

MARTENS, ELISE H. *Teachers' Problems with Exceptional Children II. Gifted Children*. Washington, Government Printing Office, 1940. Revised Edition. 44 p (Office of Education Pamphlet No. 41)

One of a series of pamphlets on teachers' problems with exceptional children. Written primarily for teachers of rural and small urban districts where little special help is available. Discusses the practical classroom problems which the teacher meets in dealing with gifted children.

National Society for the Study of Education. *The Education of Gifted Children* (23rd Yearbook, Part I). Bloomington, Illinois, Public School Publishing Company, 1924. 443 p.

A compendium of historical, psychological, and administrative considerations in the education of gifted children. Bibliography.

- *Intelligence. Its Nature and Nurture* (39th Yearbook) Bloomington, Illinois, Public School Publishing Company, 1940 Part I, 471 p., Part II, 409 p

Part I gives a 'Comparative and Critical Exposition' of the whole problem of intelligence as related to nature and nurture, with contributions by psychologists, physiologists, sociologists, and educators Part II reports "Original Studies and Experiments" of national significance The applications to gifted children are noted throughout

- PARKYN, G. W. *Children of High Intelligence A New Zealand Study* London, England, Oxford University Press, 1948 287 p.

A report issued through the New Zealand Council for Educational Research Defines high intelligence and presents data of follow-up studies of children in New Zealand Considers school organization, curriculum, teaching methods, and other matters involved in providing educational services for gifted children Advocates enrichment of the curriculum, with ability grouping as a facilitating measure Suggests means of enrichment in various subject fields Upholds ability grouping as a measure which "may, in fact, be essential for the effective realization of democratic ideals"

- SANTAYANA, S. GEORGE. "The Intellectually Gifted Child" *Clearing House*, 21 259-67, January 1947

The author traces the development of projects carried on in the interest of gifted children, analyzes their characteristics, tells what certain school systems are doing for them, and lists some unsolved problems

- THOMPSON, NELLIE Z. "Education of the Gifted in Various Countries" *Journal of Exceptional Children*, 15 193-98, 224, 239-43, 254, April and May 1949

Considers means used to conserve and develop high ability among students in Arabia, Australia, British Isles, Canada, France, Iraq, Latin American countries, New Zealand, Scandinavian countries, Belgium, the Netherlands, Switzerland, and the United States. Draws tentative conclusions

### Philosophy and Objectives

- BERNSTEIN, LOUIS "The Problem of the Gifted Child in Our Secondary Schools" *Bulletin of High Points*, 13 4-10, May 1931

Considers the problem of discovering the gifted pupils in high school and of making some provision for them Analyzes the distinguishing characteristics which may be used as identifying factors, and outlines the possibilities of treatment which may be employed in developing keenness of intellect and natural interests.

- BERRY, CHARLES SCOTT *The Education of Gifted Children for Leadership*  
Columbus, Ohio, The Ohio State University, 1945 32 p

Considers identification problems, traits, and educational objectives as applied to gifted children, with suggestions for desirable practice in the elementary and secondary schools

- "The Gifted Child—A Future Leader" *National Parent-Teacher*,  
38 27-29, March 1944.

An explanation of the help which must be given to the more gifted of the boys and girls now growing to maturity in our classrooms if they are to realize their powers in adult life and give to the world in telligent leadership

- BURNSIDE, LENOIR H "Psychological Guidance of Gifted Children" *Journal of Consulting Psychology*, 6 223-28, July-August 1942

The author, upon a basis of observations and study of gifted children during experience in the public schools of Rochester, New York, discusses five points in a guidance program (1) early recognition, (2) a challenging educational program, (3) individual guidance, (4) guidance to parents, (5) community cooperation

- CANADY, HERMAN C "Individual Differences and Their Educational Significance in the Guidance of the Gifted and Talented Child" *Quarterly Review of Higher Education among Negroes*, 5 202-05, October 1937

A study of freshmen entering West Virginia State College, to discover individual differences in intelligence and ability Discusses what needs to be done. "How to make education fit the great diversified needs of pupil groups" is a problem which relates to the whole field of educational theory, methods, and administration.

- COURVOISIER, LEILA BENOIT "Studying Musically Gifted Children." *California Journal of Secondary Education*, 15 177-82, March 1940

A study of the musically gifted children in the seventh grades of San Francisco made under the Research Department of the San Francisco Schools, to determine whether they "are stimulated sufficiently by their school programs to keep their work up to their own highest levels of achievement." Finds that these children and others like them throughout the United States "are not, and cannot be, adequately challenged by their present opportunities."

- DUNLAP, JAMES M "Testing the Tops" *Journal of Exceptional Children*,  
11 112-46, February 1945

Discusses the testing of 125 gifted school children in the Rochester, New York, area, interprets the data in terms of the world need for

leadership, and indicates that in the continental United States there are an estimated 300,000 boys and girls testing at the top in intelligence — most of them as yet undiscovered

Educational Policies Commission. *Education of the Gifted* Washington, National Education Association, 1950 88 p

Deals with the education of gifted children on all levels — elementary, secondary, and higher Shows great social waste in the failure of gifted individuals to receive proper education Emphasizes need for educational opportunities of all regardless of social or economic status Makes recommendations for consideration of both school and community Holds that society is responsible for making adequate opportunities available

"Gifted Children" *London Times, Educational Supplement*, No 844 261, July 4, 1931

A plea to give at least as much attention to the proper education of gifted children as has been given to children of low intelligence Deplores England's lack of provision for those who register exceptionally high in ability from whom comes the leadership of the nation Points out some provisions that should be made

GODDARD, H H "The Gifted Child and His Education" *NEA Journal*, 19 275-76, November 1930

"A child who is not allowed to develop as fully as his natural ability demands is not being given an equal opportunity" Recommends that all children with an IQ of 120 or above be placed in special classes or be given special provision in keeping with their abilities and nature

CROVER, CHARLES C "Gifted Children in Elementary School" *Nation's Schools*, 16 13-16, July 1935

Considers the need for and the types of special provisions which should be made for exceptionally gifted children

HATTERY, LOWELL H "Why Waste Talent?" *School and Society*, 71 81-84, February 11, 1950

Believes that gross loss of talent occurs at every stage of the educational process Points out the major causes, including (1) inferior instruction, (2) inadequate or no guidance, (3) absence of individual remedial attention, (4) economic hardship, (5) uncorrected physical deficiencies, (6) lack of motivation Urges systematic identification and ways in which we can increase the motivation of able students Points out the critical need of effective use of talent in our society

HEILMAN, ROBERT B "Lowest Common Denominator Education" *Journal of Higher Education*, 20 227-33, 280, May 1949

"Education for all should include education for the most capable"  
 Makes a plea for the education of those of profound mental capacity  
 "To make the most of our democracy, we must be sure to create the  
 essential aristocracy We must not be content with lowest-common  
 denominator education"

HENDRICKS, C "Square Deals for Superior Students" *High School Teacher*,  
 7 140-41, April 1931

Emphasizes the need of making special provision for the superior  
 high school student, and suggests procedures for meeting that need,  
 with particular reference to the small high school in which ability  
 groupings cannot be realized through the organization of separate sec-  
 tions

HIRSCH, NATHANIEL D M *Genius and Creative Intelligence* Cambridge,  
 Massachusetts, Sci art Publishers, 1931 339 p

A statement of the author's views regarding the nature of intelli-  
 gence and genius Holds that the various levels of intelligence are  
 qualitatively distinct from one another "Genius is another psychobi-  
 ological species, differing as much from man, in his mental and tem-  
 peramental processes, as man differs from the ape"

HOLLINGWORTH, LETA S "Is the Gifted Child Neglected?" *Parents' Maga-  
 zine*, 8 30-31, 42, 44, November 1933

Calls attention of parents and teachers to the possibilities of gifted  
 children and to the fact that they are often lost in the shuffle of our  
 present day school organization Suggests as solutions to the problem  
 a wider introduction of training courses in teachers colleges in the  
 education of exceptional children, and more experimentation in adapt-  
 ing the curriculum to meet the needs of these children.

JENKINS, MARTIN D "The Upper Limit of Ability among American Ne-  
 groes" *Scientific Monthly*, 68 390-401, May 1948

Points to studies showing that a considerable number of Negro chil-  
 dren are found at the level of gifted children The extreme deviates  
 reach the upper limits attained by white children. Believes that race  
*per se* (as represented by the American Negro) is not a limiting fac-  
 tor in intelligence, but that the common assumption of inferiority of  
 the Negro race and cultural limitations restricts motivation and achieve-  
 ment even among the brightest.

KELLOGG, ROBERTA "Skills Instruction for the Gifted Child in the Regular  
 Classroom." *National Elementary Principal*, 29 37-40, December  
 1949

Considers the following problems (1) Who is the gifted child? (2)  
 How do we identify the gifted child? (3) What are the needs of the

gifted child? (4) How can the needs of the gifted child be met? Gives a summary emphasizing enrichment in many forms and the need of developing all leadership potentialities

LANE, ALBERT T. "Some Aspects of the Problem of the Gifted Child." *Massachusetts Teacher*, 11.149-51, February 1932

'The educational waste due to compelling pupils of undoubted superiority to submit to the treadmill routine of curricular tasks is appalling' Points out ways of identifying gifted children and outlines units of instruction and activity which should be followed in providing a program that will take care of the special needs of this group without interfering with the educational advancement of normal pupils and without segregation into special classes

LANGE-EICHBAUM, WILHELM *The Problem of Genius* New York, The Macmillan Company, 1932 187 p (Translated from German by Eden and Cedar Paul)

A theoretical consideration of the nature of "genius," its relationship to talent and to fame, as well as to insanity The author holds that genius is not a certain type of biological equipment, but that it is a functional concept applying to the individual who is revered by numerous other persons 'One who is not yet called a genius is not a genius' "The real sequence of events is not that the 'creator' creates the work but that the work creates the 'creator' as a genius"

LEWIS, W. DRAYTON. "The Relative Intellectual Achievement of Mentally Gifted and Retarded Children" *Journal of Experimental Education*, 13 98-109, December 1944

Reviews the studies that have been made of the achievement of mentally gifted and retarded children Finds that the available information indicates that mentally retarded children will achieve in terms of their capabilities, even when one takes into consideration their relatively long learning period The level of achievement of gifted children could be raised by giving them as much attention as dull children receive

MYERS, GARRY CLEVELAND "The Social Problem of the Gifted Child." *Journal of Exceptional Children*, 2 39-43, October 1935.

The dangers of segregating gifted children in special classes are pointed out in accordance with the author's point of view that the gifted child needs contacts with all types of children in regular classes in order to help him to adjust to the larger social world after leaving school Individual attention to each child in the regular class in keeping with his ability is advocated Problems of emotional development are also considered



- NEEL, MARY O, and MATHEWS, C O "Needs of Superior Students" *Journal of Higher Education*, 6 29-34, January 1935

Describes an intensive study made with a group of 118 superior students in Ohio Wesleyan University Indicates the factors that differentiate "achievers" and "non achievers" among students of superior ability, and holds that an understanding of the difficulties and perplexities of superior college students is essential to wise guidance "An adequate system of guidance should be established at every institution."

- PEACHMAN, MARGUERITE G "Attitudes Their Significance in Education for the Gifted." *Journal of Educational Psychology*, 33 183-98, March 1942.

Discusses the importance of an understanding of the part that attitudes play in the wholesome development of the gifted child. Summarizes literature on the gifted which deals with the problem of attitudes, discusses attempts to measure attitudes of parents toward the gifted, attitudes of educators, attitudes of children, attitudes of society Lists references dealing with the subject.

- PUNKE, HAROLD H. "Provision for Superior Pupils" *Nation's Schools*, 26 22, August 1940

The author contends there is no foundation for fostering superior educational advantages for particular groups unless this education will be used for the welfare of the whole people Hence civic responsibility should be emphasized and special educational facilities should be provided, with the understanding that bright children will render greater service for the common good.

- STEINBERG, JULIAN "Glad Your Child Is Not a Genius?" *Hygeia*, 25 282, 296, 298, April 1947

Suggests that parents permit the bright child to develop all his capacities without undue restrictions

- STERN, EDITH M. "Is Yours a Gifted Child?" *Woman's Home Companion*, 76 36, 37, 107, November 1949

Written in a popular vein for parents and others interested in gifted children. Points out what can be done for them at home and at school and emphasizes the responsibility of parents for insuring a wholesome all round development.

- STORM, GRACE E "The Gifted Child." *Elementary School Journal*, 49 6-8, September 1948.

Calls attention to the many highly gifted children not receiving proper educational services and to the need of adjusting school programs for them. Comments on work of the American Association for Gifted Children.

- SULLIVAN, JOHN C "Adequate Education for the Intellectually Superior Child" *Journal of Exceptional Children*, 13 44-48, 59, November 1946.

Emphasizes the need for attention to the total growth of intellectually superior children and for opportunities to develop leadership in association with other children if they have capacity for leadership 'It takes something more than an IQ to be a good leader'

- TAYLOR, HOWARD "The Gifted Child and His Education" *Journal of Exceptional Children*, 3 10-14, October 1936

Considers six major difficulties of public education as they affect gifted children, and then analyzes the essentials of education of gifted children, including grouping or other opportunities for enriched activities, freedom to do creative thinking and acting, companionship with gifted teachers, growth in social responsibilities

- TERMAN, LEWIS M "The Gifted Student and His Academic Environment." *School and Society*, 49 65-73, January 21, 1939

Findings from research involving analysis and follow up from 1922 to date of hundreds of gifted children are presented to illustrate the value of such research and the importance of providing adequate educational facilities for the full development of the gifted

- THORNDIKE, EDWARD L "How May We Improve the Selection, Training, and Life-Work of Leaders?" *Teachers College Record*, 40 593-605, April 1939

Society should make better use of its leaders and educate potential leaders with a greater recognition of their needs and abilities Suggests for improvement of the educational offerings for leaders or potential leaders in school and college

- THUSLER, J W 'Pupil Acceleration in the Elementary Schools' *Grade Teacher*, 67 16-17, 96-98, October 1949

Sets forth the pros and cons of acceleration, recommending it only in moderate degree for children with IQ's of 125 or above Any ostentation in dealing with such children should be avoided They should be permitted to grow naturally, with leisure time interests and challenging tasks

- WITTY, PAUL A "Exploitation of the Child of High Intelligence Quotient" *Educational Method*, 15 298-304, March 1936

A discussion of the need for a better understanding of the psychology of the gifted child, in which the author deplors the excessive publicity attached to the discovery of a high IQ as purporting potential genius, and calls attention to other factors entering the picture Em-

phasizes the importance of studying and adjusting educational procedures in the light of the characteristics of gifted children

- WITTY, PAUL A. "The Gifted Child. Facts and Fallacies." *National Parent-Teacher*, 42.4-7, June 1948.

Presents several specific problems encountered with gifted children and tells how they were or could be solved. Based upon five letters received from parents who were concerned about their children's development.

- . "The Gifted Child in the Secondary School." *Bulletin of the National Association of Secondary-School Principals*, 33 259-64, April 1949.

Cites major findings of the Terman Oden report on "The Gifted Child Grows Up," emphasizing the conclusion that "above the IQ level of 140, adult success is largely determined by such factors as social adjustment, emotional stability, and drive to accomplish." Points out ways in which the school curriculum can be adjusted to the abilities of gifted pupils with emphasis upon "better prepared teachers, more abundant and varied materials of instruction, and generally improved conditions for learning."

- . "The Needs of Bright and Gifted Children." *NEA Journal*, 37.358-59, September 1948.

Points out the neglect that has characterized our treatment of gifted children and the responsibility that rests with the school and the teacher in finding and guiding children who are outstanding in ability. Suggests some specific ways in which programs for them can be enriched.

- . "Some Considerations in the Education of Gifted Children." *Educational Administration and Supervision*, 26 512-21, October 1940

Discusses the limitations of intelligence tests for identifying gifted children and considers other means of identifying them. Points out possibilities of development of gifted children through democratic values offered in heterogeneous groups and enrichment of curriculum in secondary and elementary schools.

- ZACHRY, CAROLINE B. "Personality Adjustment of the Superior Child." *Journal of the National Education Association*, 21 89-90, March 1932.

On the basis of a case study the author calls attention to the importance of providing for the superior child an environment in which he "can make the most adequate all round adjustment" and one in which he may learn to appreciate abilities different from his own, yet equally needed for carrying on in our industrial civilization. "By inference this article attempts to point out some of the dangers to the superior child of homogeneous grouping too narrowly conceived."

- ZORBAUGH, HARVEY W "Are You Throttling a Future President?" *American Magazine*, 110 16-17, 99-101, December 1945

As director of the New York University Clinic for Gifted Children, the author writes in defense of the gifted child whom he calls "America's forgotten child." Gives nine clues as to his identity and suggests a pattern for his training.

- "How May the Community Utilize Its Gifted Children?" *Mental Hygiene*, 24 1-16, January 1910

Emphasizes the need for community programs for gifted children. Believes that irreparable loss accrues to society because schools and communities do not make appropriate provisions for the realization of potentialities of gifted children.

- "Priorities for Prodigies" *National Parent-Teacher*, 36 8-10, April 1942

The problems of gifted children are presented, and the importance and necessity of providing intelligently for their development pointed out. The failure of the schools to do this is considered one of the reasons for later maladjustments on their part.

### Physical, Mental, Emotional, and Social Traits

- BECKHAM, ALBERT S "A Study of Social Background and Art Aptitude of Superior Negro Children" *Journal of Applied Psychology*, 26 777-84, December 1942

The art performances of three groups of children (100 intellectually very superior, 100 with some art training, 100 picked at random from the four high school grades) were studied and compared as to intelligence, grade distribution, age distribution, sex distribution, and economic social status. Findings varied according to various test items. The importance of socio economic status was minimized in the light of scores made by the various groups.

- "A Study of Social Background and Music Ability of Superior Negro Children" *Journal of Applied Psychology*, 26 210-17, April 1942

Three groups of children were involved: (1) 100 superior children, (2) 100 unselected children, (3) 30 children picked by their teachers as superior in musical accomplishment. All groups were given the Kwalwasser Dykema music tests, and various comparisons were made between groups, between musical aptitude and age, and between musical aptitude and previous musical instruction. Intelligence was not found to be an important factor in high musical aptitude scores, age as a factor was negligible.

BERMAN, ABRAHAM B, and KLEIN, ABRAHAM "A Personality Study of Maladjusted Pupils of Superior Mentality" *High Points*, 24 57-63, February 1942

Describes method of approach in analyzing the causes of scholastic failure of pupils with IQ's of 110 or over in the Boys High School, New York City, and techniques devised for guiding them to scholastic success The following means were used in approaching the problem in interviews with boys, administration of the Bell Adjustment Inventory, consultation with parents, interviews with teachers, and exchange of information with outside agencies interested in the boy

BLAIR, GLENN MYERS *Mentally Superior and Inferior Children in the Junior and Senior High School* New York, Bureau of Publications, Teachers College, Columbia University, 1938 87 p (Contributions to Education No 766)

A comparative study of backgrounds, interests, and ambitions of approximately 900 junior and senior high school students, 50 per cent of whom were rated by intelligence tests to be "superior" and 50 per cent "inferior." The author presents findings and implications for education

CARROLL, HERBERT A. *Genius in the Making* New York, McGraw-Hill Book Co, 1940 307 p

"The author has attempted to present a picture of the intellectually gifted individual, especially as he appears in childhood In discussing his mental, social, and physical characteristics and the educational adjustments necessary to his progress, full use is made of the results of research." Is primarily concerned with a psychological description and interpretation of mental superiority, but some consideration, too, is given to educational adjustments and to the relative merits of such procedures as acceleration, enrichment, and special groupings.

CONKLIN, A. M "A Study of the Personalities of Gifted Students by Means of the Control Group" *American Journal of Orthopsychiatry*, 1 178-83, January 1931

Sixty seven high school students with IQ's ranging from 130 to 163, who had failed or were failing in two or more high school subjects, were compared with a control group not failing in any subject. The two groups were equated on the basis of sex and IQ They were mainly first generation immigrant groups. Results indicate that over 50 per cent of both groups present behavior that would be considered atypical according to social and psychiatric study. More fundamental causes need to be discovered.

COX, CATHERINE M., and OTHERS. *The Early Mental Traits of Three Hundred Geniuses*. Stanford University, California, Stanford University Press, 1928 842 p (*Genetic Studies of Genius*, Vol. II)

The report of a biographical research study dealing with the childhood traits of outstanding geniuses in history, establishing the fact that those who made notable contributions in adulthood also showed an intellectual superiority as children

- COX, CENEVIEVE L. "The Daily Program of Thirty Gifted Children" *Pedagogical Seminary and Journal of Genetic Psychology*, 37 123-38, March 1930

"Thirty children, from two special classes, with IQ's ranging from 133 to 190, kept records of how each hour of the day was spent for a period varying from 3 to 15 days. This is a report of the activities recorded, with averages for boys and for girls separately

- *The Interests, Abilities, and Achievements of a Special Class for Gifted Children* New York, Bureau of Publications, Teachers College, Columbia University, 1923 194 p (Contributions to Education No 131)

A study of gifted children segregated from high fourth and low fifth grades in Columbus Ohio. Considers the selection and organization of the class, the achievements of the pupils in educational tests, their improvement in a given period of time, their interests and ambitions, and classroom activities.

- DAVIDSON, HELEN H. *Personality and Economic Background A Study of Highly Intelligent Children* New York, King's Crown Press, 1943 189 p (Photolithographed)

Report of a research study the purpose of which was twofold (1) to describe the salient personality characteristics of a selected group of bright children and (2) to determine how much of the variation in these personality traits can be attributed to conditioning by economic circumstances. The subjects attended two different schools in New York City, representing diverse environmental backgrounds as measured by the income level of the parents. Conclusions drawn substantiate previous studies as to the characteristics of highly intelligent children and indicate very little relationship between socio-economic studies as measured by income and certain aspects of personality.

- DEICH, CHARLES, and JONES, ELMER. *A Study of Distinguished High School Pupils in Iowa* Washington, Government Printing Office, 1924 58 p (Bureau of Education Bulletin 1923, No 46)

An analysis of various factors with relation to superior high school students in Iowa. Includes a consideration of achievement, home environment, physical conditions, vocational ambitions, social activities, and other aspects of educational and social development. Suggests a program for training superior high school students in the state. Bibliography.

FARIS, ROBERT E. L. "Sociological Factors in the Development of Talent and Genius" *Journal of Educational Sociology*, 9 538-44, May 1935

Discusses social and environmental factors which seem to have been important in the development of special talents and abilities, based upon studies of the life histories of a number of gifted persons

FINCH, FRANK H., and CARROLL, HERBERT A. "Gifted Children as High-School Leaders" *Pedagogical Seminary and Journal of Genetic Psychology*, 41 476-81, December 1932

Report of a study undertaken at the University High School, University of Minnesota, to throw some light on the problem of whether the intellectually gifted child is a social leader. Conclusions support the findings of Terman, Hollingworth, Lamson, and Gray, i.e., that "given a superior group of children to lead, the leading will be done by the gifted children"

GERBERICH, J. R. "The Gifted Pupils of the Iowa High School Survey" *Journal of Applied Psychology*, 14 566-76, December 1930

Gives the results of a mental educational testing program with the senior students of a number of Iowa high schools as subjects. The upper 10 per cent of the graduates were selected for intensive study. Gives details as to age distribution, sex, home environment, college attendance, and vocational ambition.

GOLDBERG, SAMUEL. "A Clinical Study of K, IQ 196" *Journal of Applied Psychology*, 18 550-60, August 1934

An analysis of a clinical examination made of a child six years old of unusual mental gifts and a discussion of the problems presented of right school placement for him

HATT, ELISE. "What Is Superiority in Young Children?" *Childhood Education*, 8 451-57, May 1932.

By means of the Biogram (a graphic profile recording on a single sheet children's ranking in many different traits) a study was made at the Merrill Palmer nursery school to secure data on the outstanding factors which determine the superiority of a young child. The article presents the Biograms and accompanying case studies of two children considered by a group of 39 judges as respectively the "most desirable" and the "least desirable" of the 50 nursery school children. The judges chose as "most desirable" a child who was superior in all three phases of human behavior — physical, personal, and mental. This emphasized the importance of considering the whole child.

HILDRETH, GERTRUDE H. "Characteristics of Young Gifted Children" *Pedagogical Seminary and Journal of Genetic Psychology*, 53 287-311, December 1933.

An analysis of records for 50 gifted children, matched with 50 control cases, indicates for the group as a whole nearly five times as many favorable notations of intellectual, personality, and character traits for the gifted as for the controls." Children studied were from three to nine years old

- "The Educational Achievement of Gifted Children" *Child Development*, 9 365-71, December 1938

A study based upon annual cumulative achievement records obtained with the Stanford Achievement Test at Lincoln School, Teachers College, since 1922 for three groups of children — those measuring between 130 and 140 IQ, those testing 140 IQ or higher, and a control group of children testing below 110 IQ. Conclusions were drawn as to relationship of varying degrees of intelligence to progress in school where environmental conditions remain similar and fairly constant

- HOLLINGWORTH, LETA S "The Child of Very Superior Intelligence as a Special Problem in Social Adjustment" *Mental Hygiene*, 15 3-16, January 1931 Also in *Annals of the American Academy of Political and Social Science*, Vol 149, No 3 (1930), pp 151-60

Discusses the problems that arise from the combination of immaturity and superiority in children with an IQ of 130 or above. Considers problems of work, play, social relationship, religion, and emotional control, in which the gifted child needs careful, understanding guidance

- *Children Above 180 IQ: Origin and Development* Yonkers-on-Hudson, New York, World Book Company, 1942 332 p (Edited by Harry L. Hollingworth)

A record of 12 children compiled after the death of the author, with supplementary data furnished by the editor. Also contains reproductions of papers presented by the author during her lifetime on the results and implications of her observations of rare intelligence

- "Do Intellectually Gifted Children Grow toward Mediocrity in Stature?" *Pedagogical Seminary and Journal of Genetic Psychology*, 37 345-58, September 1930

On the basis of an experimental study covering a period of years, the writer concludes that measurements of stature repeated annually on a group of growing children, show that intellectually gifted children run constantly about 5% taller, as a group, than do unselected children, and that as a group, intellectually gifted children consistently maintain their tallness as they grow toward maturity"



HOLLINGWORTH, LETA S., and RUST, METTA M. "Application of the Bernreuter Inventory of Personality to Highly Intelligent Adolescents" *Journal of Psychology*, 4 287-93, October 1937.

A study, using the Bernreuter Inventory of Personality, of 55 boys and girls with an average age of 18 years 6 months, whose IQ's had been taken in early childhood and ranged from 135-190. Results indicate that the highly intelligent are less neurotic, more self sufficient, and less submissive than the populations with which they were comparable.

JENKINS, MARTIN D. "Case Studies of Negro Children of Binet IQ 160 and Above" *Journal of Negro Education*, 12 159-66, Spring 1943.

Presents the case data on ten Negro children rated by various mental tests as 160 IQ and higher. The children came from different sections of the country and from varied school and familial situations.

—, "A Socio-Psychological Study of Negro Children of Superior Intelligence" *Journal of Negro Education*, 5 175-90, April 1936.

An investigation of the incidence of Negro children of superior intelligence in a segment of the school population in Chicago, Illinois, and certain characteristics of such children. A relatively large incidence is found and the study concludes that the data presented "add weight to the already abundant evidence that intelligence and educability are matters of individual differences rather than of racial differences."

LEWIS, W. DRAYTON. "A Comparative Study of the Personalities, Interests, and Home Backgrounds of Gifted Children of Superior and Inferior Educational Achievement." *Pedagogical Seminary and Journal of Genetic Psychology*, 59 207-18, September 1941.

Two groups of gifted children form the basis for study: one a group of 1078 children with high records of achievement, the other a group of 756 somewhat retarded in achievement, especially in the light of their intelligence rating. "It appears to be significant that the educationally accelerated group is credited with possessing more desirable personality traits, interests that are intellectual in nature, and superior home backgrounds."

—, "Some Characteristics of Very Superior Children" *Pedagogical Seminary and Journal of Genetic Psychology*, 62 301-09, June 1943.

Analyzes data secured in a survey of some 15 000 school children in grades 4 to 8 inclusive. Compared children of 145 IQ or more with children whose IQ ratings were 125 to 144 and with the 10 having highest intelligence quotients in each grade. The author concludes that there is need for a "readjustment of our elementary educational program to serve more adequately the most promising material which comes to our schools."

- *A Study of Superior Children in the Elementary School* Nashville, Tennessee, George Peabody College for Teachers, 1940 104 p (Contributions to Education No 266)

"The purpose of this study is to determine certain characteristics and activities, as well as the socio-economic background and scholastic achievement of the upper 10 per cent of a group of approximately fifty thousand pupils in grades four to eight " The upper 2 per cent and a group designated by teachers as 'geniuses' were also selected for purposes of comparison

- MARGOLIES, ABRAHAM "A Portrait of George Miles — Problem Child" *High Points*, 28 25-30, September 1946

An unsocial, maladjusted but intelligently superior boy finds in a high school social studies class, with the understanding guidance of a sympathetic teacher, the means for overcoming his unsocial attitudes and becoming interested in school and group activities

- McELVEE, EDNA W "Seymour, a Boy with 192 I Q" *Journal of Juvenile Research*, 18 28-35, January 1934

Case study of an exceptionally gifted boy which "stresses especially his gain in educational achievement and the change in his attitude toward school after attending a class for superior children "

- McGEHEE, WILLIAM, and LEWIS, W DRAYTON "A Comparison of Certain Personality Characteristics of Mentally Superior and Mentally Retarded Children" *Journal of Educational Research*, 35 600-10, April 1942

The subjects of this study were 4797 boys and 4264 girls from 36 states, 310 communities, and 455 schools in the United States The data secured "appear to justify the conclusion that the child of superior intelligence has a much better chance of developing a desirable personality than does the child who is retarded in intelligence "

- "The Socio Economic Status of the Homes of Mentally Superior and Retarded Children and the Occupational Rank of Their Parents" *Pedagogical Seminary and Journal of Genetic Psychology*, 60 375-84, June 1942

As part of a series of Coordinated Studies in Education, this study involves data on occupational rank of parents for 4176 mentally superior children and 3697 retarded children, on socio economic status, for 4237 mentally superior and 3571 retarded subjects The results indicate that "a knowledge of the parents occupation or the socio-economic condition of the home of the child is a very precarious index of the child's intelligence "

MUSSELMAN, JOHN W "Factors Associated with the Achievement of High School Pupils of Superior Intelligence" *Journal of Experimental Education*, 11 53-68, September 1942

Two hundred and ninety seven Baltimore high school pupils of 120 or more IQ were studied by means of various achievement, personality, and home background tests Relations of achievement to various personality factors were analyzed There was lag between promise and performance, and in the light of these findings future research and special attention to pupils of superior intelligence are needed.

NEVILL, E MILDRED "Brilliant Children With Special Reference to Their Particular Difficulties" *British Journal of Educational Psychology*, 7 247-57, November 1937

A study of 78 children referred to a Psychological Center, having IQs ranging from 140 to 180 on Binet tests It presents findings with respect to characteristics of such pupils as well as difficulties and maladjustments Thirty five of the children were considered "difficult."

PATRIDGE, ERNEST DE ALTON *Leadership Among Adolescent Boys* New York, Bureau of Publications, Teachers College, Columbia University, 1934. 109 p (Contributions to Education No 608)

The study revealed that "adolescent leaders seem to be all round superior individuals as compared with their associates" Based upon a study of leaders in a boys camp and of a Boy Scout troop Implications for education are pointed out with emphasis upon the social values of encouraging leadership among gifted children

REMMERS, H H "Some Attributes of Superior Students" *Personnel Journal*, 10 167-78, October 1931

A group of 531 "distinguished" Purdue students were compared by the method of group differences with a random sampling of 300 non distinguished students, to find in what measurable ways distinguished students differ from their nondistinguished fellow students A paper read before the annual meeting of the American Psychological Association at Iowa City, December 1930

RICC, MELVIN C "A Superior Child Who Would Not Talk." *Child Development*, 9 361-62, December 1938

Report of a case study of a child showing definite superiority of intelligence but with an unusually low vocabulary and poor pronunciation in the preschool years.

SCHNEIDEMAN, NORMA V, and SMITH, MARGARET S "A Survey of an Opportunity Room for Gifted Children" *Journal of Educational Psychology*, 24 392-95, May 1933

Survey of an unslected opportunity room for gifted children in a representative city school system — an ungraded room of 22 children doing from 4A to 6A work. Results show that children gifted intellectually may be average or even inferior in other traits. Data from survey shown in tabular form.

SCHOTT, EMMETT L. *A Study of High School Seniors of Superior Ability*. Columbia, Missouri, University of Missouri, 1925. 52 p. (University of Missouri Bulletin, Vol. 26, No. 13, Education Series No. 20)

Report of an investigation designed to ascertain the nature of superior ability and to discover a workable method of detecting superior learning capacity. Uses primarily learning experiments and draws deductions from their results.

SEAMONS, RACHEL MCKNIGHT. *A Study of a Group of Children of Exceptionally High Intelligence Quotient in Situations Partaking of the Nature of Suggestion*. New York, Bureau of Publications, Teachers College, Columbia University, 1940. 112 p. (Contributions to Education No. 788)

Comparisons are made between pupils of IQ 130-200 and IQ 72-101 to determine if children superior in intelligence are also superior in resistance. Although the superior group was readily less suggestible than the low intelligence group, there was a large amount of overlapping.

SPEIGHT, HAROLD E. B. "Who Is the Superior Student?" *School and Society*, 48: 545-49, October 29, 1938.

Points out characteristics of the superior student and considers what can be done for him in high school and college.

STRANG, RUTH. "Inner World of Gifted Adolescents." *Journal of Exceptional Children*, 16: 97-101, 125, January 1950.

Analyzes on the basis of compositions written by 300 high school pupils in English classes who had IQs over 120, some of the problems they experience in their personal lives. Suggests such compositions as a means of helping teacher or counselor to learn "how it feels to be a gifted adolescent."

SUBARSKY, ZACHARIAH. "What Is Science Talent?" *Scientific Monthly*, 66: 377-82, May 1948.

Indicates what appear to the author to be manifestations of science talent: innate curiosity, ability to detect problems and incongruities in facts, ability to think in quantitative terms, manipulative ability or mechanical mindedness. Cites cases of high school students exemplifying these traits, and urges continued search for science talent.

TERMAN, LEWIS M., and OTHERS. *Mental and Physical Traits of a Thousand Gifted Children*. Stanford University, California, Stanford University Press, 1925. 648 p. (*Genetic Studies of Genius*, Vol. I)

The report of an extensive investigation which made available the mental and physical measurements of a large group of intellectually superior children. The direction and extent of their deviation from unselected children were established, insofar as the traits considered were measurable. The findings indicated that the mean of the gifted group was more or less superior to that of unselected children in educational achievement, in health and physique, in desirable personality traits, and in the proportion of near relatives who had made notable contributions.

THEMAN, VIOLA, and WITTY, PAUL. "Case Studies and Genetic Records of Two Gifted Negroes." *Journal of Psychology*, 15:165-81, April 1943.

Data are presented for a Negro girl who had an IQ of 200 and for a Negro boy who showed an IQ of 163. Both children were from homes of good socio-economic status and showed fairly good personal adjustment. The boy's development over a period of eight years more nearly fulfilled his early promise than the girl's.

THOM, DOUGLAS A., and NEWELL, NANCY. "Hazards of the High I.Q." *Mental Hygiene*, 29:61-77, January 1945.

Report of a follow-up study of 43 children with IQ's above 130 who had been seen in child guidance clinics between 1927 and 1934. Later examinations indicated the reliability of the earlier psychological tests. A happy and harmonious home life appeared favorable to good development, along with consistent and reasonable training in the early years and with a continuity of normal relationships in family and social life.

THORNDIKE, ROBERT L. "Performance of Gifted Children on Tests of Developmental Age." *Journal of Psychology*, 9:337-43, April 1940.

"Presents an analysis of the results obtained by testing a group of children known to be very superior in abstract intelligence with a test of 'developmental age.'" The subjects of the study were 28 gifted boys and 24 gifted girls in Speyer School, Public School 500, New York City. A wide variation in maturity was exhibited from item to item of the test, though with these groups, as compared to groups unselected for intelligence, certain aesthetic and intellectual appeals were more effective.

WARNER, M. L. "Eugene, a Brilliant Boy Who Failed in School." *Psychological Clinic*, 19:143-55, October 1930.

A boy 11 years 11 months old, with IQ 142, was expelled from two schools because of poor work and bad behavior. Developed habitual

attitude of disobedience Was assigned to a special school, spent one year there, and was then sent to junior high school He did excellent work there

- WILKINS, WALTER L "The Social Adjustment of Accelerated Pupils" *School Review*, 44 445-55, June 1936

Considers findings of research of activities of accelerated pupils in high school which tend to show that the adjustment of such pupils is beneficial and healthful Immediate study based upon 282 pupils graduated from high school at least one month before their seventeenth birthdays

- WITTY, PAUL. *A Study of One Hundred Gifted Children* Lawrence, Kansas, Bureau of School Service and Research, University of Kansas, 1930 44 p (University of Kansas Bulletin of Education, Vol II, No 7)

An intensive study of the mental physical, and social traits of a group of gifted children selected from the schools of Kansas City, Missouri A follow up study made five years later supplemented the original study Findings in general corroborate Terman's conclusions in his *Genetic Studies of Genius*

- "The Relative Frequency of Gifted Boys and Girls in the Secondary School" *Educational Administration and Supervision*, 20 606-12, November 1934

The author presents data secured from group intelligence tests given to 14,149 boys and 13,493 girls from grades 9 to 12 in 13 secondary schools and compares accomplishments by sex Finds the ratio of gifted boys to gifted girls to be about 1 to 1, which does not support conclusions by other investigators of a 2 to 1 ratio in favor of boys

- , and JENKINS, MARTIN D "The Educational Achievement of a Group of Gifted Negro Children" *Journal of Educational Psychology*, 25 585-97, November 1934

Analyzes in detail the educational achievement of 26 Negro children with Stanford Binet IQ's of 140 or above The new Stanford Achievement Test, Form W, was the measure used Gives data regarding grade placement, school progress, subject quotients, and other pertinent items

- , and LEHMAN, HARVEY C "A Study of the Reading and Reading Interests of Gifted Children" *Pedagogical Seminary and Journal of Genetic Psychology*, 40 473-85, June 1932

From the psychological laboratories of Northwestern and Ohio universities Based upon a study of 50 gifted children with IQ's of 140 and above Compares findings at two different periods—in 1924-25

and in 1929-30. "All of the data give clear-cut evidence that the voluntary reading of gifted children is extensive and exceeds greatly the amount which mentally average children do."

YATES, DOROTHY H. *A Study of Some High School Seniors of Superior Intelligence*. Bloomington, Illinois, Public School Publishing Co., 1922. 75 p.

A study of the 25 brightest seniors of a local high school in comparison with 25 of average intelligence. The pupils with superior intelligence were quicker in learning to walk and to talk, in diction, and in physiological maturity. They were also more interested in school, athletics, and music, but less interested in art.

### Organization of Local Projects

ADAMS, JESSE E., and ROSS, C. O. "Is Skipping Grades a Satisfactory Method of Acceleration?" *American School Board Journal*, 85:24-25, July 1932.

The authors present an account of a controlled experiment designed to analyze the results of skipping on the educational achievement of the pupils concerned. They conclude on the basis of their findings that "under reasonably favorable conditions skipping is a satisfactory method of accelerating pupils of superior ability."

ALPERN, HYMEN. "The Super-Honor School — Next Step in the Education of the Superior Student in the Secondary Schools of New York." *High Points*, 21:20-26, May 1939.

Presents a survey of present practices in New York City. Suggests a segregated school or "super-honor high school" for the most gifted.

BAKER, HARRY J. "An Experiment in the Education of Gifted Children." *Journal of Exceptional Children*, 9:112-14, 120, January 1943.

The director of the psychological clinic of the Detroit public schools describes an experiment put into operation in four of the city schools looking toward a better adaptation of the curriculum to the needs of gifted children. "One of the important problems in dealing with children of high ability is that they shall maintain a sense of belonging to the entire school building and be an integral part of it." In the Detroit experiment this result was accomplished by keeping these pupils with their regular classes most of the time but by giving them an opportunity to report to special groups or projects on the basis of having completed the requirements for their regular work.

*The Baltimore Program of Education for Pupils of Superior Ability*. Baltimore, Bureau of Measurement, Statistics, and Research, Board of Ed-

ucation, September October 1940 98 p (Baltimore Bulletin of Education 18, No 1)

The entire issue is devoted to consideration of the various types of programs under way in Baltimore for school adjustments to meet the needs of gifted children in both elementary and secondary schools. Administrative and curricular problems and programs are discussed by various members of the public school staff.

BROWN, MARION V "Teaching an Intellectually Gifted Group" *Elementary School Journal*, 49 380-88, March 1949

On the basis of two years' work with a special class of children selected on the basis of intellectual ability, a teacher describes what the school did for them, how the curriculum was adapted, how they worked with other children in certain fields, and how they progressed in educational achievement and personal development.

BRUMBAUGH, FLORENCE "A School for Gifted Children" *Childhood Education*, 20 325-27, March 1944

Describes the plan for a seven year experiment at Hunter College Elementary School New York City, with 250 children composing nine groups of pupils aged 3 to 8 years having a median IQ above 145. Gives description of the physical equipment of the school and tells how the program was enriched. It was planned that ultimately the school would be composed entirely of pupils with superior mental ability.

BURNSIDE, LENOIR H "An Experimental Program in Education of the Intellectually Gifted Adolescent" *School Review*, 50 274-85, April 1942

Describes an experiment devised in 1938, to extend over a five-year period, in Monroe High School Rochester, New York for the development of a program especially adapted to stimulate and develop the interests of the most gifted children selected from each of the senior high school grades.

CARLSON, EDITH FOX "Problems in Educating the Highly Endowed" *Journal of Exceptional Children*, 13 201-04 220, April 1947

The author, Psychologist for the Massachusetts Department of Mental Health writes on the basis of experience with several special class groups for gifted children over a period of six years. Cites individual cases and points out the challenge which a special class can present and its possibilities for removing barriers to development.

—, and WILES, MARION E "Special Education for Gifted Children" *Journal of Exceptional Children*, 10 73-77, December 1943

Describes the launching in Brockton, Massachusetts of a special class of 16 gifted children (8 boys and 8 girls) selected with the help of the Brockton Child Guidance Clinic from diversified home condi-



tions The pupils had a median chronological age of 8 years and 9 months, a median mental age of 11 years and 8 months, and a median IQ of 134

CARTER, GRACE. "The Gifted Child in the Frederick Burk School" *Western Journal of Education*, 37 16-17, March 1931

A brief account of the method used in the Frederick Burk School of San Francisco, California, in meeting the needs of the bright child on the basis of individual consideration of his interests and abilities. The time saved in the accomplishment of prescribed work was given over to an enrichment of his experiences in group projects and special subjects.

COHEN, HELEN LOUISE. "The Program for Gifted Pupils in New York City" *English Journal*, 26 548-56, September 1937

An investigation of plans made in the schools of New York City to provide especially for the needs of gifted pupils with relation to organization of special groups, enrichment of curriculum, techniques, instructional and administrative units in which they belonged.

DRAG, FRANCIS L. "The Gifted Child A Report of Practices in California Cities" *California Journal of Elementary Education*, 10 8-28, August 1941.

A general discussion of possibilities, problems, and methods in special training for gifted children, with descriptions of practices in the following California cities: San Diego, Santa Ana, Santa Barbara, Watsonville, Berkeley, Los Angeles, and Long Beach.

ELEANORE, SISTER M. "Organizing the Curriculum for the Bright Pupil." *Catholic School Journal*, 38 259-60, 293-94, 39 9-10, 40-41, 146-47, November and December 1938, January, February, and May 1939.

Reviews and summarizes research and plans in use throughout the United States for adjusting the curriculum to meet the needs of the bright pupil. The series of five articles deal with: The Bright Pupil, Homogeneous Grouping and Special Rooms, Plans Built on the Unit Assignment, Flexible Promotion Schemes and Credits, and Enriching the Curriculum. Gives list of sources and references.

"English for the Gifted Report of the Committee on Honors English." *High Points*, 24 42-53, January 1942.

A committee of New York City teachers of English names three kinds of "honor" classes: (1) those consisting of students generally gifted in English, (2) those organized in some special field in English and consisting of pupils particularly gifted in that field, (3) those classes in English organized in an honor school and consisting of pupils who are generally gifted. The committee justifies selective grouping.

and discusses the basis of selection, the choice of teachers, the objectives of honor classes, the content of the curriculum, and the teaching method.

GODDARD, H. H. *School Training of Gifted Children* Yonkers-on-Hudson, New York, World Book Company, 1928 226 p

Considers the education of gifted children as it was organized in Cleveland, Ohio. Includes among the "gifted" those with intelligence quotients of 120 or above, though the IQ was not the sole determiner for membership in the special group. Describes the classes at work, their objectives, and their results.

GRAVES, S. MONROE "Flexibility Is Wellesley's Keynote." *Journal of Education*, 112 131-32, September 8, 1930

Special classes for the gifted children were a feature of the Wellesley, Massachusetts, public school program. The losses due to double promotion or "skipping" were avoided through the use of rapid progress and enrichment of curriculum as means of meeting the needs of the bright child.

GREENBERG, BENJAMIN B. "The Education of the Intellectually Gifted" *Journal of Exceptional Children*, 5.101-09, February 1939

Points out that gifted children need an educational program through which their potentialities can be realized and their personalities developed. Describes the program organized for this purpose at Speyer School (Public School 500) in New York City.

GREENBIE, MARJORIE B. "Salvaging Genius" *Parents' Magazine*, 16.32-33, 124, April 1941.

The need for recognizing and providing developmental programs for gifted youth is illustrated by projects carried on in two small communities, one in Carmel, New York, and the other in Dowagiac, Michigan.

HALL, JOHN J. "How Does Your School Rate in Providing for Gifted Children?" *Journal of Educational Research*, 22 81-88, September 1930

Presents a score card by which a school can rate the efficiency of its own provisions for gifted children. Considers as essential factors (1) methods used in selecting bright children, (2) grade in which they are selected for special treatment, (3) organization of classes, (4) modification of curriculum, (5) method of instruction. Assigns a large score to "a well thought out combination of both acceleration and enrichment of curriculum that takes care of every child's needs."

"High-School Methods with Superior Students" *NEA Research Bulletin*, 19.156-97, September 1941. (Vol XIX, No. 4)

A summary of reports received from 1062 secondary schools regarding points of view and practices followed in the identification and treatment of gifted students. Considers: (1) characteristics of superior students; (2) points of view regarding their education; (3) organization and administration of current school provisions; (4) curriculum and instruction.

HOLLINGWORTH, LETA S. "What We Know About the Early Selection and Training of Leaders." *Teachers College Record*, 40:575-92, April 1939.

The author holds that intelligence is the chief criterion for the early selection of leaders, since children rating high in intelligence tend to rate high in other traits desirable for leadership. After selection should come adequate training. As an attempt in this direction, with both intellectual and emotional guidance, the program at Speyer School (Public School 500) in New York City was carried on.

HUGHES, CHARLOTTE. "If Your Child Is Exceptional." *Parents' Magazine*, 13:26-28, 97, December 1938.

Describes some of the things New York City schools were doing for the exceptionally gifted child, with special reference to the program carried on at Public School 500.

JOHNSON, GEORGE R. "Educating Bright Children." *Journal of Exceptional Children*, 10:41-44, November 1943.

The principal of an elementary school administrative unit in St. Louis, Missouri, discusses the means used in the school system of that city in making adjustments for bright children without resorting to the organization of special groups. Individual treatment which keeps each child engaged in work suitable to his capacity and related to his interests was the keynote of the procedure used.

JOHNSON, WILLIAM H. "Program for Conserving Our Superior Elementary-School Students." *Educational Administration and Supervision*, 29:77-86, February 1943.

Points out the value of an accelerated program for making the best use of abilities of superior children. Presents some experimental evidence revealed by various studies, and describes the program in operation in the Chicago schools, which involved a two-track plan providing one-half year acceleration in grades 1 to 4 and one-half year acceleration in grades 5 to 8.

JONES, EDWARD S. *A Charter for the Superior Student*. Buffalo, New York, University of Buffalo, 1936. 87 p. (University of Buffalo Studies, Vol. X, No. 3, January 1936)

A statement of the purpose and plan of the five-year study on articulation between high school and college made by the University of Buffalo under a grant from the General Education Board, with special reference to the progress of superior students. Maximum values to the student and to the community, with a rate of progress in keeping with the students' ability, were the goal of the program.

KEYS, NOEL. "Should We Accelerate the Bright?" *Journal of Exceptional Children*, 8:248-54, 269, May 1942

The most able children are neglected while the slow pupils are receiving the benefit of special classes. Holding a child back because of age has been proved to retard his mental ability, while advancement at a reasonable rate of speed is of advantage mentally, socially, and physically.

LANPHEAR, PRUDENCE T. "What Cleveland Is Doing for Superior Pupils" *English Journal*, 26 723-28, November 1937.

Describes an enrichment program for children of high intelligence, carried out from kindergarten through senior high school.

LAYCOCK, SAMUEL R. "Special Classes for Gifted Children in a Small City" *Understanding the Child*, 9 3-6, April 1940

Describes a project in Saskatoon, Saskatchewan, Canada, which was accepted by pupils, teachers, and public as a functioning part of the public school system. Inconspicuous administration, highly selected teachers, and enriched curriculum characterized the program.

MERRY, FRIEDA KIEFER. "Summer Classes for Gifted Children" *Educational Method*, 14 388-90, April 1935

"The purpose of this article is to show how a summer group may serve as one means of initiating special classes for gifted children in the regular public school system." Furnishes suggestions with regard to choosing a location, selecting the children, equipment, type of program, techniques and experiences, and qualifications of the teacher.

MERSAND, JOSEPH. "How Should the Teacher Carry on Work for the Gifted Child?" *High Points*, 18 42-50, September 1936

Describes what was being done in one of the high schools of New York City to provide for the special needs of gifted children through the organization of special classes, with suggestions based upon this experience for developing the program.

OSKOWITZ, DAVID. "Educating Superior Students" *High Points*, 28 5-9, June 1946

The Assistant Superintendent of the High School Division in New York City presents the merits of the 'honor school' as compared with

the "honor class" in the regular school. Holds that it provides for continuity, total curricular modification and enrichment, the determination of long range unified objectives, opportunity for cooperative effort, and administrative flexibility.

MUELLER, A. D. "Providing for Superior Pupils in Southern Secondary Schools" *High School Quarterly*, 21 32-35, October 1932

Report of a study made of special provisions for gifted pupils in 119 southern high schools and a comparison of the results with those secured through the national survey of secondary education relative to provisions for individual differences in 8594 schools in the United States. The investigations "seem to indicate that ability grouping, opportunity rooms, differentiated assignments, and special coaching so as to permit extra promotions are the most successful plans in present use for providing for the gifted high school pupil."

MUNSON, GRACE. "Finding the Gifted Child" *Journal of Exceptional Children*, 11 3-6, 24, 25, October 1944

Stating that to find the gifted child is as great a problem for the school administrator as to educate him, the director of the Bureau of Child Study for the Chicago Public Schools describes the procedure used to identify the gifted child, the system of record keeping employed, the guidance services offered, and the scholarship room maintained by a number of high schools

National Society for the Study of Education *Classroom Problems in the Education of Gifted Children*, by Theodore S. Henry (19th Yearbook, Part II) Bloomington, Illinois, Public School Publishing Co., 1920 125 p

Report of an investigation based upon observations of an experimental room for gifted children which was under the supervision of the author, and upon the study of other special rooms for bright children. Flexible promotion schemes are considered as affording some facilities for providing for the needs of gifted children, but special classes are recommended as much more desirable and as being just as important for the gifted child as for the subnormal. Methods best adapted to their instruction are discussed. Bibliography.

PETERS, EDITH C. "The Gifted Child in Cleveland." *Journal of Exceptional Children*, 7 300-07, 320, May 1941

The principal of an elementary school in Cleveland, Ohio, in which there are organized groups of gifted children, describes the program and the classroom procedures used, pointing out the advantages of grouping gifted children in this way

PIUGLER, HILDWIG O. "The Gifted Society's Neglected Assets" *Clearing House*, 24 141-45, November 1949

Describes a program for gifted children carried on at Colfax School in Pittsburgh, Pennsylvania. For mental growth, the pupils are in separate classes, for social growth, they meet in nonsegregated classes. The "Workshop" for academic subjects gives the gifted child an opportunity to work with his mental peers, to be "accepted for what he is" and to be "respected for what he knows." Indicates what seems to the author to be the advantages of such a plan for both pupils and teachers.

RAPHAEL, ANGELUS (Brother). "Special Treatment for Superior Students in College." *Catholic Educational Review*, 40 38-46, January 1942

Reports practices at Harvard, Yale, Princeton, Swarthmore, and Massachusetts Institute of Technology directed toward adjustments for gifted or "honor" students

ROBERTSON, DAVID A. "Cooperation between Goucher College and the High Schools of Baltimore" *School and Society*, 32 875, December 27, 1930

In 1928 Baltimore established a four year course for superior students in girls' secondary schools, in which it was proposed to include one year of collegiate work. There were highly selected teachers. Students who have satisfactorily completed the accelerated course will be admitted to advanced standing in Goucher College upon the same terms as students from recognized minor colleges. Since the Baltimore high schools are not accredited junior colleges, the entrance requirements in this case shall include the passing of a written test in each subject offered for advanced credit."

SEXSON, JOHN A. "Teaching the Gifted Child" *American Childhood*, 16 3-6, December 1930.

An account of the work done in the Pasadena (California) city schools for the gifted child. Included children with intelligence quotients above 125, representing grades 1 to 6 on the one hand, and junior high school grades on the other hand. Creative self expression is the essential factor which makes the treatment accorded children in these classes a real mental hygiene program for children of superior mental environment. The creative outlets most utilized are music, verse, dramatics, and art."

STENQUIST, JOHN L. "Baltimore's Plan for Superior Pupils" *Nation's Schools*, 28 20-22, October 1941

Describes experiments in operation in the Baltimore schools looking toward the development of methods particularly adapted to the special needs of gifted children. Discussed are a plan of limited acceleration in the primary and the intermediate grades combined with an enrichment program, an effort to broaden the definition of superior ability,

summer school classes for the superior pupils, accumulation of a body of curriculum materials growing out of these experiments.

TUROFSKY, ISAAC "Classes for Superior Children in the Vocational High School" *High Points*, 31 27-33, January 1949.

Experience at George Westinghouse Vocational High School in New York City is cited as the basis for recommendations for setting up special classes for talented and superior pupils in vocational high schools Journalism, creative writing, dramatics, radio broadcasting, and world affairs are suggested as appropriate fields Problems of identifying superior pupils, selecting suitable teachers, securing space and materials, and adapting methods of instruction are among the topics considered

### Curriculum Adjustments

ALBERS, MARY ELIZABETH, and SEACOE, MAY V. "Enrichment for Superior Students in Algebra Classes" *Journal of Educational Research*, 40. 487-95, March 1947.

"An attempt was made to test the desirability of providing an enrichment unit for superior students in second semester ninth grade algebra classes" The experiment was in operation approximately 80 school days, with the use of experimental and control groups Conclusions point to a saving of time, as well as an interest sufficiently great to provide necessary motivation.

AVERILL, ESTHER C. "Art and the Talented Child." *School Arts*, 35.563-68, May 1936.

Describes method used in teaching a child talented in art, through which she was allowed freedom to develop along her own line of interest and according to her own creative imagination.

BAKER, HARRY J. "Characteristics of Superior Learners and the Relative Merits of Programs of Enrichment and Acceleration for Them" In Conference on Reading, Vol. XI: *Classroom Techniques in Improving Reading*. Chicago, University of Chicago Press, 1949, pp. 153-57. (Supplementary Educational Monograph No. 69, October 1949).

Discusses characteristics and potentialities of superior learners, curriculum and administrative adjustments for them, with some attention to the practices in Detroit, Michigan

BASTER, ESTELLA M. "Enrichment of the Social Studies for Gifted Pupils." *Secondary Education*, 4 81-83, March 1935.

Describes plans used in the Thomas Jefferson Junior High School, Cleveland, Ohio, to adapt the social studies work to fit the needs of gifted pupils.

- BOBBITT, BLANCHE "What Science Teachers Can Do for Gifted Pupils." *Clearing House*, 22-267-69, January 1948.

A supervisor of science tells what opportunities there are for the high school teacher to enrich the curriculum for exceptionally bright children, including science club activities, extra time in the laboratory, acting as laboratory assistants, special experiments, social and professional contacts with scientists, and others

- BOLZAU, EMMA L. "Methods Used with a High Ability Group" *Social Studies*, 29 255-58, October 1938

A paper presented before the Social Studies Club of the Philadelphia Teachers Association, April 30, 1938, which outlines special work provided in the South Philadelphia High School for Girls for the gifted pupils

- BOSLEY, BERTLYN, and MACLEOD, GRACE "Establishing Good Food Habits in Gifted Children. A Report of a Study Conducted at Speyer School" *Teachers College Record*, 43 57-70, October 1941

A four-and one half-year study of nutrition was conducted at the Speyer School, New York City, on a grant from the Sheffield Farms Company Accomplishments were the realization of improved attitudes among the children with regard to the wise selection of food

- BRIGGS, LESLIE J "Intensive Classes for Superior Students" *Journal of Educational Psychology*, 38 207-15, April 1947.

Describes a project at Ohio State University, whereby "accelerate seminars" in educational psychology met for two hours one night each week instead of the usual one hour five days a week The author justifies such special procedures for superior students as a time saving device and as a method of study more suitable to the needs of highly intelligent students Careful selection of students, motivation, and adaptation of instructional methods must be considered.

- CARR, JOHN W. "Recreational Reading for Bright Children" *Childhood Education*, 8 290-95, February 1932

"Under conditions prevailing in public schools, the recreational reading activities offer the best opportunity to make special provision for bright children" Includes a discussion of the possibilities of such reading, suggestions to the teacher for making provision for it in the school program, and a recommended list of books for the purpose

- CARROLL, H A "Spelling and the Gifted Child" *Minnesota Journal of Education*, 11 174-76, January 1931

Gives briefly the general results of the author's study on "generalization of bright and dull children" with reference to spelling Makes concrete application of the findings to the methods that should be used with the respective groups.



COHEN, HELEN LOUISE, and CORYELL, NANCY G, Editors *Educating Superior Students* New York, American Book Co., 1935 340 p

A cooperative publication of the First Assistants Association of the City of New York. Contributions deal with various subjects of the secondary curriculum, showing how provision is made for gifted students in the New York City high schools. Recommendations are offered in each chapter for further adjustment in the respective subjects to meet the needs of superior or talented young people.

COLLITON, J. W. "Teaching the Gifted Pupil." *Educational Outlook*, 8 175-81, March 1934.

Describes experiments carried out in teaching high school mathematics to gifted children in Trenton, New Jersey.

DOWNES, JAMES E. "An Experiment in Meeting the Needs of Superior Students." *Social Education*, 4 247-49, April 1940.

Describes a plan in which special provision for superior students was made in the social studies department in the high school at Summit, New Jersey. Members of the group were excused from attending classes and from routine assignments during second semester and were expected to spend their time in extended research.

FENTON, JESSIE C., RUCH, GILES M., and Terman, LEWIS M. *Suggestions for Children's Reading, with Special Reference to the Interests of Gifted Children* Stanford University, California, Stanford University Press, 1921 27 p.

A pamphlet prepared for use in connection with the Terman survey of gifted children in California. Includes a list of the best books in each field at the time of writing and gives for each one the age at which a bright child would be most likely to be interested in the book.

FRITZ, HENRY E. "A Search for and Conservation of the Gifted." *Bulletin of High Points*, 12 19-25, October 1930.

An account of a Saturday Art Class organized to develop the abilities of those talented in drawing, with emphasis upon creative work. A plea for similar provision to be made for other types of education with gifted children.

GRADY, HELEN BELL. "Benvenuto Walks Again." *Nation's Schools*, 14 38-40, August 1934.

Describes art activities of special classes for gifted children in the public schools of Oakland, California.

GRAY, WILLIAM S. "Education of the Gifted Child With Special Reference to Reading." *Elementary School Journal*, 42 738-44, June 1942.

Reviews the three major plans that have been used to adapt instruction to the needs of gifted children: acceleration, segregation for en-

richment, and enrichment in a regular class Emphasizes the need of holding children to standards consistent with their capacity, both in the evaluation of what they read and in the solution of problems arising from their reading The ability to plan, to discover, and to invent for social reconstruction and advancement of civilization is considered the goal of the educational program for them

- HAHN, JULIA L. "Hobby Clubs for Children with Special Gifts" *Educational Method*, 18 21-26, October 1938

Describes a program of special opportunities provided through 'hobby clubs' for children in grades 4, 5, and 6 in Washington, D.C. Among the clubs established were the Choral Club, the Creative Writing Club, the Art Club, the Science Club and the Melody making Club (for creative music) Strong interest and unusual ability in the special phase of work represented by the club were the bases of admission, and the members came from various schools of the supervisory division of the city

- HANDY, MABEL L., and LINDBLUM, ALICE L. "Special Education for Gifted Children II Enriching the Curriculum" *Journal of Exceptional Children*, 10 103-07, 126, February 1944

This is the second of a series of three articles Tells how a class of 16 superior pupils in the Brockton, Massachusetts, public schools was helped and guided through four years of activity to the development of an enriched program by the stimulation of the pupils' ability and their mastery of the tools needed to draw upon the resources of art, literature, science, and music (For other articles, see Carlson and Wiles, under Organization of Local Programs and Nelson and Carlson, under Evaluation and Follow up Studies')

- HASKINS, RALPH W. "The Problem of the Exceptionally Able Student" *Massachusetts Teacher*, 16 5-6, February 1937

Describes experiments at Amherst High School whereby special attention to the development of the students of exceptional abilities was given They were given the opportunity to avoid many routine class activities and to go ahead with advanced, difficult, but interesting things

- HAWTHORNE, W. C. "A College for Ten-Year Olds" *Illinois Teacher*, 23 291, 309-11, May 1935

Describes activities in a special class for the gifted, Santa Monica, California Many and varied interests self activated industry, and self government under the teacher's general guidance mark the day's program

- HERMANS, MABEL C. "Experiments with Gifted Pupils" *English Journal*, 20 540-47, 741-45, September and November 1931

An account of several experiments carried on in junior and senior high schools in integrating experience, in developing the power of reflection, and in stimulating creative writing

- HERRIOTT, M E *Modifying Technique of Instruction for Gifted Children* Urbana, Illinois, University of Illinois, 1926 17 p (Educational Research Circular No 41)

A brief presentation of desirable adaptations of teaching technique, including such suggestions as the reduction of the amount of drill, of review, and of illustrations, the extension of the use of abstract theory, of excursions and field trips, and of pupil reports. Emphasis should be placed upon evaluation and organization which may give practice in thinking independently and effectively

- HOLLINGWORTH, LETA S "An Enrichment Curriculum for Rapid Learners at Public School 500. Speyer School" *Teachers College Record*, 39 296-306, January 1938

A description of the aims and activities of two "Terman Classes" organized under the joint sponsorship of Teachers College and the New York Board of Education. Discusses curricular adaptations, enrichment units, and special activities

- HOROWITZ, A EUGENE. "An Experiment in American History with Bright Students" *High Points*, 20 12-19, 1938

Describes a unit developed during a year's experiment in a New York City high school

- JOHNSON, CELIA. "The Gifted Primary Child" *Educational Method*, 10 456-58, May 1931.

An account of pioneer work carried on in Pasadena, California, through which an enriched curriculum was provided for mentally gifted children in the primary grades. Projects in handwork and social activities accompanied the academic instruction, all centered about one large center of interest chosen for the year

- KENYON, ELMER. "The Child of Promise in Drama." *Pittsburgh School Bulletin*, 25 41-44, October 1931.

Discusses the possibilities in dramatic training for developing the exceptional or gifted child.

- LANE, ALBERT T. "Some Aspects of the Problem of the Gifted Child." *Massachusetts Teacher*, 11 149-51, February 1932.

"The educational waste due to compelling pupils of undoubted superiority to submit to the treadmill routine of curricular tasks is appalling." Points out ways of identifying gifted children and outlines units of instruction and activity which should be followed in providing a

program that will take care of the special needs of the group of children without interfering with the educational advancement of normal pupils and without segregation into special classes

- LAWTON, SHAILER U "Physical Education and the Exceptional Child" *Journal of Health and Physicol Education*, 5 22-23, 63, March 1934

Finds that physical education at present lacks a definite program for handling the physically handicapped or the exceptional and mentally gifted children. Discusses especially the value of such a program to the development of the gifted child. Makes some suggestions concerning the philosophy and aims which should underlie development of this program

- MARTENS, ELISE H *Curriculum Adjustments for Gifted Children*. Washington, United States Government Printing Office, 1946 82 p (Office of Education Bulletin 1946, No. 1)

This bulletin is the outgrowth of a project covering several years of cooperative effort. Considers basic objectives, problems of identification and treatment, general types of curriculum organization used, and special provisions made in the attempt to meet the needs of gifted children and youth. Describes a number of units of experience actually carried on

- MOORE, LILLIAN "The Challenge of the Bright Pupil" *Mathematics Teacher*, 34 155-57, April 1941

A brief discussion of the general lack of provision for the bright pupil, especially in mathematics, with suggestions for enriching the work for his benefit.

- MOSSO, ASENATH M "An Experiment with and for Pupils of Superior Ability" *School Review*, 52 26-32, January 1944

With about 50 pupils in the three upper grades having intelligence quotients of 130 or better and 80 more between 120 and 130, the faculty of a high school in Floral Park, New York, surveyed opportunities for superior pupils to work at their own level of ability. The senior group (comprising 12 who elected to do so) was allowed its own library corner and held scheduled meetings, or seminars, stressing not acceleration, but enrichment and assistance to others

- MUNSON, GRACE "Adjusting the Reading Program to the Gifted Child." *Journal of Exceptional Children*, 11 45-48, November 1944

Stating that the reading program for the gifted must range from the kindergarten through high school, the author gives suggestions for adjusting the program to the individual pupil and emphasizes the importance of selecting a suitable teacher.

MURPHY, CLARA D "An Attempt at Solving the Problem of Individual Differences" *Mathematics Teacher*, 29.32-38, January 1936.

Describes two courses in mathematics offered in Evanston Township (Illinois) High School. (1) a course for superior pupils based upon college preparatory work, (2) an opportunity course for the slower pupils.

OSBURN, W. J., and ROHAN, BEN J. *Enriching the Curriculum for Gifted Children*. New York, The Macmillan Company, 1931. 408 p.

Proposes activities for children of superior mental ability without the organization of separate classes for them Based upon an experiment worked out in the schools of Appleton, Wisconsin.

POTTS, EDITH M "Students with Unusual Preparation and Ability." *American Journal of Nursing*, 31 221-29, February 1931

Carries into the field of schools of nursing the principles of consideration for individual ability and needs. Outlines the possibilities of adapting the curriculum of the preparatory school in nursing to the high level of the exceptional student.

RAUBICHECK, CHARLES W. "The Reading of Superior High-School Pupils" *English Journal*, 29 342-50, September 1940.

Presents results of analyses of amount and quality of reading of superior pupils in high school. Calls attention to three aspects of reading (the instrumental, the interpretive, and the rhapsodic) in which there should be a clear conception of progression. "It is a fatal mistake in dealing with superior pupils not to press them at every stage to the limit of their capabilities. When this condition is achieved, the aspiring pupil will soon set the pace for the perspiring teacher."

RICHTER, ALEXANDER. "Music and the Forgotten Pupil." *Music Educators Journal*, 25 19-22, October 1938.

The "forgotten child" of this article is the superior child, particularly the child gifted in music and art. Describes the special curriculum planned for such children in the High School of Music and Art, New York City.

ROSENBLUM, MINNIE. "Teaching Atypical Children Creative Writing." *Elementary English Review*, 9 153-55, 165, June 1932.

Describes methods and results of teaching creative writing to three groups of children, two of which were of superior mentality, while the third was a retarded group. The author feels that "the same technique of teaching creative writing can be used" with both the mentally superior child and the mentally retarded child, but that "the language used and the situation presented must be modified to meet the understanding of each type of child."

"Saturday School for Talented Children" *School and Society*, 38 699, November 25, 1933

A brief account of a program at New Jersey College for Women which provided shops and studios where gifted children met for mutual inspiration and guidance. It was attended by boys and girls 7 to 17 years of age recommended by art supervisors from public, private and parochial schools and selected by competitive examinations given by the college.

SCHUCK, MYRNA INGRAM "Curriculum Enrichment for Rapid Learners" *Social Education*, 3 173-78, March 1939

A teacher at the Speyer School of New York City describes the program of the school for the enrichment of the lives of the bright children enrolled in its special classes. Fifty children ranging from 130 to 200 IQ and in age from 9 to 12 years were concerned. The development of units of experience centered about the general subject "The Evolution of Common Things."

SKINNER, MABEL "The Bright Pupil in the Civics Department of the Washington Irving High School" *High Points*, 16 16-21, October 1934

Discusses characteristics of the "bright pupil," presents several brief case histories, and makes suggestions which proved helpful in this particular high school in furnishing opportunities for the self development of such pupils.

STEDMAN, LULU M. *Education of Gifted Children* Yonkers-on-Hudson, New York, World Book Company, 1924 190 p

The author presents the results of actual classroom contact with gifted children in Los Angeles. Various types of case studies are presented, both of children who are generally gifted and of those who have specific talents. Recommendations are made for enrichment of curriculum and teaching methods.

STEENBERG, SAMUEL "The Gifted Child" *Historical Outlook*, 24 314-18, 366-72, October and November 1933

A report of what was being done and what can be done for the superior child by the teachers of history and civics in the New York City high schools. Describes also the methods used at that time in 18 other American cities to make provision for intellectually superior high school pupils in social studies.

STEPHAN, ELMER A., and MILLER, A. J. "An Experiment in Art Instruction for the Talented Pupil" *Pittsburgh Schools*, 16 182-212, March-April 1942

Report of the work being done by the Carnegie Institute of Pittsburgh in cooperation with the public school system in encouraging and

developing artistic talent among school children. Statistical data are presented concerning intelligence, scholastic record, social and economic background, and degree of success in art.

TAYLOR, HAZEL. "Teaching the High IQ's" *Social Education*, 3 111-14, February 1939

A Philadelphia high school teacher describes methods used in adjusting the curriculum in the social studies to meet the needs of the intellectually gifted student.

"Techniques in Stimulating and Guiding the Reading Activities of Superior Learners" In *Conference on Reading*, Vol. XI *Classroom Techniques in Improving Reading*. Chicago, University of Chicago Press, 1949, pp. 158-71.

"In the Primary Grades," by Grace A. Granger. Gives examples of how outside experiences are utilized to enrich reading experiences. Concludes: "You should know your pupils from the cultural, economical, educational, physical, spiritual, and emotional standpoint, observe them when they have free choice of reading material, evaluate their needs, put them in a challenging situation so far as reading activities and opportunities are concerned, enrich their experiences, combine all language arts components, such as listening, speaking, writing, reading, call their abilities into full use, teach them to evaluate their own taste and progress, encourage reading to supplement time devoted to movies, radio, and television."

"In the Middle and Upper Grades," by Elsie Whitlock Adams. Emphasizes the need of studying characteristics of superior readers, utilizing their abilities in group projects, furthering their reading competence, promoting personal and social development through reading, and evaluating pupil progress.

"In Junior and Senior High Schools," by Frances Hunter Ferrell. Writes on the basis of practice with the 30 highest students in the senior class in a given high school, taught as a segregated group, and ranging in intelligence from about 111 to 130. Critical reading is encouraged, as well as cultivation of the attitude of suspended judgment with reference to a controversial issue. "Evaluating, judging, imagining, problem solving" are all involved.

WILDER, HOWARD B. "A High School Enrichment Program." *Harvard Educational Review*, 9 33-42, January 1939.

Describes the enrichment program carried on in the high school of Melrose, Massachusetts, for students of superior ability. The plan was worked out on the basis of the principle "that enrichment in the regular classroom through new teaching techniques is more desirable than enrichment by segregation." Choice of and participation in special projects were voluntary on the pupils' part.

- WITTY, PAUL A , and LEHMAN, HARVEY C "The Reading and the Reading Interests of Gifted Children " *Pedagogical Seminary and Journal of Genetic Psychology*, 45 466-81, December 1934

Data are presented for 1924-25, 1929-30, and 1931-32 on a group of 50 children of IQ 140 or higher. The kinds of voluntary reading enjoyed most by the gifted children at three different age levels are shown in tables, with the most popular books listed by sex and chronological age of the readers.

### Evaluation and Follow-up Studies

- BURKS, BARBARA S , JENSEN, DORTHA W , TERMAN, LEWIS M , and OTHERS *The Promise of Youth* Stanford University, California, Stanford University Press, 1930 508 p (*Genetic Studies of Genius*, Vol III)

A continuation report of the investigation begun in 1921-22 concerning the traits of gifted children and their development during a period of six years. The most important single outcome of the follow up investigation is the abundant and conclusive evidence that for the group as a whole the picture did not greatly change in the period that elapsed between the studies. With minor exceptions, what was true of these children in 1921-22 was true of them in 1927-28.

- CARLSON, EDITH FOX. "Project for Gifted Children. A Psychological Evaluation " *American Journal of Orthopsychiatry*, 15 648-61, October 1945

An account of the operation of a special class for gifted children in Brockton, Massachusetts. Case studies are cited showing the development of certain children over a period of several years, while they were members of the class. Special attention is given to the personality adjustments taking place, and to the factors operative in the process of therapy afforded by the class activities.

- DRANSFIELD, J EDGAR *Administration of Enrichment to Superior Children in the Typical Classroom* New York, Bureau of Publications, Teachers College, Columbia University, 1933 112 p (*Contributions to Education* No 558)

An outline of methods for making satisfactory provision for enrichment for intellectually superior children within the possibilities of typical classroom procedure. Describes a controlled experiment carried on to evaluate the method and concludes that the recitation time of superior pupils can be reduced in one or more specific subjects without injury to their regular studies and with profit in the enrichment work."



ENGLE, THELBURN L. "A Study of the Effects of School Acceleration upon the Personality and Social Adjustments of High School and University Students" *Journal of Educational Psychology*, 12 523-39, October 1938

Data were secured from 200 high school and 128 university accelerated and nonaccelerated students paired by sex, grade location, intelligence rating, and school marks. The Cowan Adolescent Personality Schedule was used to determine number and kinds of social activities engaged in, and personal interviews and letters were used to determine possible causes of maladjustments. No significant statistical differences were found, though certain tendencies relating acceleration to feelings of social maladjustment were indicated.

GRAY, HOWARD A., and HOLLINGWORTH, LETA S. "The Achievement of Gifted Children Enrolled and Not Enrolled in Special Opportunity Classes" *Journal of Educational Research*, 24 255-61, November 1931

Compares the educational progress over a period of three years of two groups of exceptional children all testing at or above 130 IQ — one group segregated in two special classes for purposes of instruction, the other group mixed among heterogeneously composed classes. In the segregated groups about one-half of the time was given to traditional subject matter and the other half in enrichment of the curricular experiences. The authors conclude that the "advantages to be hoped for from the homogeneous grouping of gifted children lie not so much in expectation of greater achievement in the tool subjects as in an enrichment of scholastic experience with additional intellectual opportunities."

GREENBERG, BENJAMIN B., and BRUNER, HERBERT B. *Final Report of the Public School 500 (Speyer School), 1935-40*. New York, Board of Education of the City of New York, Division of Elementary Schools, 1941. 160 p. (Publication No. 12)

Describes the experimental program carried on for five years with (1) rapid learners and (2) slow learners at Speyer School. Gives follow up data for gifted pupils entering New York City high schools, and concludes with an evaluation of the program and recommendations for its application in the elementary schools of the city.

HEUR, WILLIAM A. "Junior High School Accelerants and Their Peers in Senior High School." *School Review*, 45 158-95, 269-99, March and April 1937

An account of methods and results obtained in a special class for superior pupils designed to reduce the period of junior high school edu-

cation to two years, established in a junior high school in Hazleton, Pennsylvania, in 1923. The study here reported evaluates "the later achievement, especially in senior high school of three subsequent rapid progress groups by comparing them with normal progress junior high school pupils of equal ability at the time of entrance to the junior high school."

HILDRETH, GERTRUDE. "Stanford Binet Retests of Gifted Children." *Journal of Educational Research*, 37 297-302, December 1943

A group of gifted children, tested in 1916, with IQ ratings of 130 or above, were again tested in 1937. Findings are compared, not only for the two years, but with similar studies. One of the conclusions arrived at is: "No one IQ ever indicates exactly any child's tested ability. When the gifted are under consideration this generalization is all the more true." The safer question is: "What are his IQ's on several successive tests?"

HOLLINGWORTH, LETA S., and KAUNITZ, RUTH M. "The Centile Status of Gifted Children at Maturity." *Pedagogical Seminary and Journal of Genetic Psychology*, 45 106-20, September 1934

A research study undertaken to secure data with respect to the question, "What will be the intellectual status of gifted children as they approach and reach maturity?" Data were found from 116 subjects who in childhood tested above 130 and were again tested 10 years later. Eighty-two per cent were found, when near maturity, to rate in the top centile of the military draft by Army Alpha."

JONES, EDWARD S., Editor. *Studies in Articulation of High School and College with Special Reference to the Superior Student*, Series I and II. Buffalo, New York, University of Buffalo, 1934 and 1936. (University of Buffalo Studies, Vol. IX, 1934, 319 p.; Vol. XIII, 1936, 351 p.)

Report of a series of studies begun in 1931, whereby the University of Buffalo arranged (1) "to give educational advice to a few of the most brilliant students in the Buffalo high schools who expected later to attend the College of Arts and Sciences of the University," and (2) "to give special advisory service to those of its own students who were candidates for the Bachelors degree in three years." The respective studies consider the nature of the superior student, the prediction of college performance, the measurement of overlapping between high school and college subjects, and various factors affecting college performance.

KEYS, NOEL. *The Underage Student in High School and College: Educational and Social Adjustments*. Berkeley, California, University of California Press, 1938. 271 p.

Report of an investigation dealing with two distinct groups. (1) 348 students entering the University of California under 16½ years of age, (2) 113 boys and girls graduating from the high schools of Oakland, California, from 1 to 3 years younger than normal, or from 1 to 5 semesters accelerated. Each group was compared with a control group on the basis of scholastic achievement, physical condition, personality adjustment, and social adjustment. The author concludes that "until such time as our schools are prepared to make for the brightest children special provisions comparable to those made for the very dull, a policy of more rapid grade progress for the highly endowed seems altogether commendable."

- LAMSON, EDNA E. "High School Achievement of Fifty-Six Gifted Children." *Pedagogical Seminary and Journal of Genetic Psychology*, 47: 233-38, September 1935

"Part of a wider investigation carried forward since 1922, when a group of children between the ages of 7 and 9 years were selected from public schools in New York City by means of Stanford-Binet Tests for the purpose of founding two experimental classes of pupils testing above 135 IQ." This section of the study analyzes the final high school achievements of the group that comprised the subjects of the author's *A Study of Young Gifted Children in Senior High School*. The investigation tends to show that "young gifted children in senior high school tend to maintain superior intellectual achievement throughout the entire course."

- , *A Study of Young Gifted Children in Senior High School*. New York, Teachers College, Columbia University, 1930. 117 p. (Contributions to Education No. 424)

A follow-up study of 56 gifted high school students who had originally been studied while in the elementary school. Presents quantitative data as to constancy of intellectual status, school accomplishment, failures, extracurricular activities, future plans, health, and general attitude. Uses a control group for making comparisons. Bibliography.

- LORGE, IRVING, and HOLLINGWORTH, LETA S. "Adult Status of Highly Intelligent Children." *Pedagogical Seminary and Journal of Genetic Psychology*, 49 215-26, September 1936.

Follows to maturity a number of individuals who in childhood tested at or above 140 IQ. Only in those who tested 160 or above as children, can tendencies toward "genius" be expected, "if by that term is to be meant the degree of mental ability that is capable of outstanding original intellectual achievement." Those who in childhood test at and above 150 IQ constitute the "top" among college graduates. "They are the students of whom one may confidently predict that they will win honors and prizes for intellectual work."

MOORE, MARGARET WHITESIDE *A Study of Young High School Graduates* New York, Bureau of Publications, Teachers College, Columbia University, 1933 78 p (Contributions to Education No 583)

"A study of 308 pupils who graduated from high school at the age of 14 to 15 with special reference to their success in college This young group was found to surpass the statewide group in achievement in college as measured by comprehensive objective tests The study suggests the need for long term educational guidance planned in accordance with the requirements, interests, and abilities of individual students "

MORGAN, CLELLEN L "An Experiment with a Special Class of Superior Undergraduate Students" *Journal of Applied Psychology*, 20 146-53, February 1936

Report of a study at Purdue University to evaluate the seminar method of procedure for the enrichment of a course in elementary educational psychology for superior students Results were favorable

MOSSO, ASENATH M "A Seminar for Superior High School Seniors" *School Review*, 53 464-79, October 1945

Describes a special plan developed in a high school in Floral Park, New York, whereby pupils who had IQs above 120 and who exhibited originality and leadership qualities were permitted to work on projects of their own planning as a part of their senior year's work The plan is evaluated by the pupils It is concluded that results are "extremely encouraging"

NELSON, EOWIN A, and CARLSON, EDITH F "Special Education for Gifted Children III Evaluation at the End of Three Years" *Journal of Exceptional Children*, 12 6-13, 24, October 1945

The third of a series of three articles Reports evaluation of an experiment with a class of gifted children in an elementary school in Brockton, Massachusetts It appears that bright children achieve in excess of their grade placement when left in their regular grades, and that special class placement does not affect scores on standardized achievement tests Special class education seems to furnish a richer background of information and teaches children how to use it to greater advantage (For previous articles, see Carlson and Wiles, under *Organization of Local Programs* and Handy and Lindstrom, under *Curriculum Adjustments* )

REGENSBURG, JEANETTE "Studies of Educational Success and Failure in Supernormal Children" *Archives of Psychology*, No 129, May 1931 150 p

From the records of intellectually superior children referred to the Bureau of Child Guidance of New York City, fifty cases were chosen for intensive study relative to factors involved in school success or failure. The conclusion is reached that "granted superior intellectual endowment, school success is more fully assured (1) if the child's experience at home, while satisfying, nevertheless induces him to face weaning experiences from an early age in order to insure social independence, and (2) if he is encouraged to be active, interested in the world outside him, and eager to make contact with the people in it."

SUMPTION, MERLE R. *Three Hundred Gifted Children* Yonkers-on-Hudson, New York, World Book Company, 1941 235 p.

A follow up study of gifted pupils who have been in the special classes of the Cleveland schools, and a summary of data concerning their subsequent development. Points out objectives for the gifted children's classes and the conclusions resulting from the study, as well as recommendations based upon the data.

TERMAN, LEWIS M. "Psychological Approaches to the Biography of Genius." *Science*, 92 293-301, October 4, 1940.

Reviews some approaches made to the biographical study of eminent persons, with emphasis upon Cox's study made in connection with *Genetic Studies of Genius*. Then summarizes findings to date of the study of intellectually superior children first tested in 1922 under the author's direction and followed up since that time.

—, ODEN, MELITA H., and OTHERS *The Gifted Child Grows Up Twenty-Five Years Follow-up of a Superior Group*. Stanford, California, Stanford University Press, 1947. 448 p. (*Genetic Studies of Genius*, Vol. IV)

Sets forth the results of a study in which a group of gifted children in elementary schools 25 years ago were followed through to adulthood. Gives findings corroborating conclusions presented in earlier volumes of the series.

WILKINS, WALTER L. "High School Achievement of Accelerated Pupils." *School Review*, 44 268-73, April 1936.

A study of 252 pupils from the last year of high school in Chicago, Kansas City, East St. Louis, Wichita, Evanston, and Kenilworth, chosen upon the criterion of graduation at least one month before the age of seventeen. Results indicate "that pupils who are accelerated in the elementary school achieve more than satisfactorily in the secondary school."

WILSON, FRANK T. "A Survey of Educational Provisions for Young Gifted Children in the United States, and of Studies and Problems Related

Thereto" *Pedagogical Seminary and Journal of Genetic Psychology*, 75.3-19 September 1949

A questionnaire sent to state and city school superintendents and to colleges and universities brought replies substantiating the following conclusions (1) there is a strongly felt need for curricular materials trained teachers, and more information about the nature of gifted children, (2) findings already established concerning gifted children have not been applied by school people, (3) the needs are apparently not recognized by teacher training institutions. Discusses briefly the controversial issues of segregation and acceleration, and points out the implications of the replies for further study and progressive action.

WITTY, PAUL, and THEMAN, VIOLA "A Follow-up Study of Educational Attainment of Gifted Negroes" *Journal of Educational Psychology*, 34 35-47, January 1943

Eighty-two mentally superior Negro youth, identified in 1934 in a research study as having IQ's ranging from 120 to 200, were given additional tests in 1940 "Although this group of gifted Negroes does not appear to have entirely lived up to its early promise in educational achievement as measured by standardized tests, it does rank high when all criteria of attainment are considered. In terms of the meager opportunity of some of these youths, this fact is surprising and gratifying."

—, and WILKINS, LEROY "The Status of Acceleration or Grade Skipping as an Administrative Practice" *Educational Administration and Supervision*, 19 321-46, May 1933

Reviews the literature in the field and summarizes experiments dealing with acceleration in elementary and secondary schools, and in college. Considers the experiments "fragmentary, and in many instances they are poorly conceived, inadequately controlled, and vaguely reported." Feels that "more wide spread adoption of acceleration in dealing with the gifted seems desirable," that it is in keeping both with the gifted child's physical developments and with the limitations of administrative school facilities for organization of special classes.

YOUNGERT, EUGENE "Is It Desirable to Organize Special Classes for Gifted Students?" *Teachers College Record*, 39 375-88, February 1938

Summarizes some of the results of research in this field and reviews some of the programs in operation. Calls attention to the factors that should be considered in determining and evaluating the program in a given locality.

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